







INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Primary Grade 5

Term 2

2022-2023

Student's Book

Introduction

تشهد وزارة التربية والتعليم والتعليم الفني مرحلة فارقة من تاريخ التعليم في مصر، فقد انطلقت إشارة البدء في التغيير الجذري لنظامنا التعليمي بدءًا من مرحلة رياض الأطفال حتى نهاية المرحلة الثانوية (التعليم 2.0). لتبدأ أول ملامح هذا التغيير من سبتمبر 2018 عبر تغيير مناهج مرحلة رياض الأطفال والصف الأول تلاها الصفوف الثاني والثالث والرابع الابتدائي. وفي 2022 بدأنا في تغيير منهج الصف الخامس الابتدائي وسنستمر في التغيير تباعًا للصفوف الدراسية التالية حتى عام 2030، إذ نعمل على إحداث نقلة نوعية في طريقة إعداد طلاب مصر ليكونوا شبابًا ناجحين في مستقبل لا يمكننا التنبؤ بتفاصيله.

وتفخر وزارة التربية والتعليم والتعليم الفني بأن تقدم هذه السلسلة التعليمية الجديدة، فضلًا عن المواد التعليمية الرقمية التي تعكس رؤيتها عن رحلة التطوير. ولقد كان هذا العمل نتاجًا لكثير من الدراسات والمقارنات والتفكير العميق والتعاون مع الكثير من علماء التربية في كل من المؤسسات الوطنية والعالمية لكي نصوغ رؤيتنا في إطار قومي إبداعي ومواد تعليمية ورقية ورقمية فعالة.

وتتقدم وزارة التربية والتعليم والتعليم الفني بكل الشكر والتقدير لمركز تطوير المناهج والمواد التعليمية ومديرته وفريقها الرائع على وجه التحديد، كما تتقدم بالشكر لمستشاري الوزير وكذلك مديري عموم المواد الدراسية، وكذلك تخص بالشكر والعرفان مؤسسة ديسكفري التعليمية، ومؤسسة ناشيونال جيوجرافيك ليرنينج، ومؤسسة نهضة مصر، ومؤسسة لونجمان مصر، ومنظمة اليونيسف، ومنظمة اليونسكو، والبنك الدولي لمساهمتهم في تطوير إطار المناهج الوطنية بمصر، وكذلك أساتذة كليات التربية المصرية لمشاركتهم الفاعلة في إعداد إطار المناهج الوطنية في مصر. وأخيرًا تتقدم الوزارة بالشكر لكل فرد في قطاعات وزارة التربية والتعليم الذين ساهموا في إثراء هذا العمل.

إن تغيير نظامنا التعليمي لم يكن ممكنًا من دون الإيمان العميق لدى القيادة السياسية المصرية بضرورة التغيير، فالإصلاح الشامل للتعليم في مصر هو جزء أصيل من رؤية السيد الرئيس عبد الفتاح السيسي لإعادة بناء المواطن المصري. ولقد تم تفعيل تلك الرؤية بالتنسيق الكامل مع السادة وزراء التعليم العالي والبحث العلمي، والثقافة، والشباب والرياضة. إن نظام التعليم (2.0) هو جزء من مجهود وطني كبير ومتواصل للارتقاء بمصر إلى مصاف الدول المتقدمة لضمان مستقبل عظيم لجميع مواطنيها.

كلمة السيد وزير التربية والتعليم
والتعليم الفني

أبنائي الطلاب .. زملائي المعلمين

بكل فخر واعتزاز يسعدني أن أشارككم تلك المرحلة الحاسمة في ملحمة التنمية الشاملة المستدامة، ويشارك فيها جميع أطياف الشعب المصري العظيم، وهذا يستدعي أن يكون لدينا منظومة تعليمية قوية تنتج جيلًا قادرًا على مواجهة التحديات الكبرى التي يشهدها العالم في الوقت الحاضر، وأن تكون له الريادة في امتلاك مهارات المستقبل؛ ولهذا فإن الدولة المصرية تحرص على ترسيخ العلم من خلال بناء منظومة تعليمية على قدر عال من الجودة، تمكن أبناءها من مهارات العصر وتجعلهم قادرين على خوض مسارات التنافسية الإقليمية والعالمية في وقت يشهد العالم فيه ثورات صناعية متعاقبة.

وهذا يحتم علينا أن يكرس نظامنا التعليمي التأكيد على المهارات والفهم العميق وإنتاج المعرفة، وذلك من خلال بناء منظومة مناهج حديثة تتواكب مع التغيرات الحادثة على كافة الأصعدة، وتؤكد على التربية من أجل تنمية المهارات والقيم وعلى تكامل المعارف، وتعدد مصادر التعلم، ودمج التكنولوجيا لإثراء العملية التعليمية وتحسين نواتجها، وأن تتضمن أهم القضايا المعاصرة على كافة المستويات.

وعلينا أن نتكاتف جميعًا لمواصلة رحلة التطوير الدائم في ركائز التعليم، وتوفير أساليب الحداثة في منظومتنا التعليمية، والاهتمام بعناصرها، ودعمها بكل ما يسهم في ريادتها، للوصول إلى نظام تعليمي متميز.

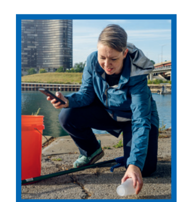
تمنياتي لأبنائي الطلاب ولزملائي المعلمين بدوام التوفيق.

الأستاذ الدكتور رضا حجازي

وزير التربية والتعليم والتعليم الفني

Contents

Theme 3



Theme 4



Software Projects 44

Scope and sequence



THEME 3 Digital Citizenship

Essential Question: How can ICT tools help us connect with people all over the world?

LESSON	TOPICS	SKILLS INTEGRATION		
		Life skills	Values	Issues and challenges
LESSON 1 Explorer in Action	• The importance of digital citizenship. • Identifying digital platforms to share and store information • Environmental concerns	**Learn to know:** problem-solving	**Scientific values:** appreciation of science and scholars	**Citizenship issues:** national unity; loyalty and belonging **Globalization issues:** digital citizenship
LESSON 2 Digital citizenship and social responsibility	• Social responsibility • Corporate social responsibility	**Learning to know:** critical thinking **Learning to live together:** communication	**Personal values:** independence **Co-existence values:** respect	**Globalization issues:** technological awareness, digital citizenship **Citizenship values:** awareness of rights and responsibilities, belonging
LESSON 3 Online communication	• Tone of online communication	**Learning to do:** decision-making **Learning to know:** critical thinking **Learning to live together:** communication	**Academic values:** appreciation of technology	**Environment and development issues:** social participation **Globalization issues:** technological awareness
LESSON 4 Information websites	• Information websites • Helpful website features • Website creation	**Learning to know:** problem-solving	**Scientific values:** appreciation of science and scholars	Globalization issues: technological awareness
LESSON 5 Commercial and non-commercial internet services	• Commercial and non-commercial internet services	**Learning to know:** critical thinking	**Work values:** perseverance	**Globalization issues:** technological awareness
LESSON 6 Using ICT for content creation	• Collections – Microsoft Edge • Writing help – Microsoft Editor	**Learning to know:** creativity	**Work values:** cooperation	**Globalization issues:** technological awareness
LESSON 7 How to choose online sources	• Using sources for research	**Learning to know:** problem-solving **Learning to do:** decision-making	**Scientific values:** appreciation of science and scholars	**Citizenship issues:** national unity; loyalty and belonging **Globalization issues:** technological awareness
LESSON 8 Choosing between synchronous and asynchronous communication	• Synchronous and asynchronous communication	**Learning to live together:** communication **Learning to do:** productivity	**Live with others values:** sharing	**Globalization issues:** civilizational communication **Globalization issues:** digital citizenship **Globalization issues:** technological awareness



THEME 4 Software Projects

Essential Question: How can ICT tools help solve problems in our everyday lives?

LESSON	TOPICS	SKILLS INTEGRATION		
		Life skills	Values	Issues and challenges
LESSON 1 Explorer in Action	• How technology has been used to solve problems	**Learn to know:** creativity **Learn to do:** productivity	**Scientific values:** appreciation of science and scholars	**Globalization issues:** technological awareness, digital citizenship, civilizational communication
LESSON 2 How digital devices work	• Installing software • Updating software • Troubleshoot screen freezes	**Learn to know:** problem-solving	**Work values:** perseverance **Scientific values:** appreciation of science and scholars	**Globalization issues:** technological awareness
LESSON 3 An introduction to binary numbers	• Binary numbers	**Learn to know:** problem-solving **Learn to know:** critical thinking	**Scientific values:** appreciation of science and scholars	**Globalization issues:** technological awareness, civilizational communication
LESSON 4 Determining the needs for a digital project	• Determining the needs for a digital project	**Learn to know:** problem-solving **Learn to know:** **creativity**	**Scientific values:** appreciation of science and scholars	**Globalization issues:** technological awareness
LESSON 5 Gathering data and presenting information	• Gathering data and presenting information	**Learn to know:** creativity	**Work values:** proficiency	**Environment and development issues:** environmental pollution
LESSON 6 Presenting information in an appealing way	• Presenting information in an appealing way • Microsoft Word and PowerPoint • Movie Maker	**Learn to know:** creativity **Learn to do:** productivity	**Scientific values:** appreciation of science and scholars	**Globalization issues:** technological awareness **Citizenship values:** legal awareness
LESSON 7 Producing an effective presentation	• Producing an effective presentation • Storyboards • The 10-20-30 rule of Microsoft PowerPoint	**Learn to know:** creativity **Learn to live:** self-management	**Scientific values:** appreciation of science and scholars **Work values:** proficiency	**Globalization issues:** technological awareness, civilizational communication
LESSON 8 Web design principles	• Web design principles • Creating a web page	**Learn to know:** creativity **Learn to live:** communication **Learn to do:** cooperation, productivity	**Personal values:** independence **Scientific values:** appreciation of science and scholars	**Globalization issues:** technological awareness, digital citizenship, civilizational communication



Digital Citizenship

SPOTLIGHT on Theme 3

In this theme, you will learn how to use different digital sources and ICT tools to acquire, create, and share information. You will learn how internet resources are used to communicate and the features that they should include. You will also learn how to analyze the reliability of websites and the products and services they offer. Finally, you'll use online tools to communicate and share information, choosing the form of communication most suited for the task.



ESSENTIAL QUESTION:

How can ICT tools help us connect with people all over the world?

National Geographic Explorer (Peg Keiner) collects litter and analyzes the effect of debris on the environment.



LESSON 1 EXPLORER IN ACTION

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Clarify the importance of digital applications in facing different issues (environment).	☐ Very well ☐ OK ☐ Need more work
• Identify digital applications to share and store information online.	☐ Very well ☐ OK ☐ Need more work
• Suggest plans to gather debris with my friends.	☐ Very well ☐ OK ☐ Need more work

Engage

Which environmental issue concerns you most? What do you know about it? How could you share this information with people around the world?

Learn

The explorer (Peg Keiner) is from Chicago in the United States. She is a Global Goals Ambassador for the United Nations Association Chicago Chapter and a National Geographic Explorer. She is also the Director of Innovation at a school in Chicago.

One day, at the start of the COVID-19 pandemic in 2020, she was walking around her neighborhood. She noticed there was a lot of litter from COVID PPE (personal protective equipment), such as facemasks and disposable gloves. Ms. Keiner decided to do something that would help spread awareness of the dangers of litter.



Ms. Keiner took a photo of the litter and recorded exactly where she found it. She used an app called the Debris Tracker, that you can download on your phone for free, recorded the location with GPS, and she described the kind of litter (paper, plastic, etc.). She uploaded the location and the description of the items every time she saw PPE litter. Eventually, there was a lot of data about PPE litter in the Debris Tracker.

Ms. Keiner wasn't collecting litter data alone. She educates third- through fifth-grade students on the impact of different types of litter, including PPE, on the environment. She teaches them to use the Debris Tracker, and they collect data on litter and analyze them.

On Twitter and Instagram, Ms. Keiner used the hashtag #trackingppe and piloted social media campaigns to encourage followers in 60 countries to collect PPE



debris and data. The data uploaded by Ms. Keiner, her colleagues, and her followers are in the form of GPS map locations and infographics showing the different kinds of debris. This was analyzed, and the results, which highlight the effects of PPE debris on life, were used by researchers to request change.

Social responsibility is the basis on which the Egyptian Ministry of Environment started an initiative in 2019. The "Go Green" initiative is part of the National Sustainable Development Strategy, "Egypt 2030." It covers 36 environmental issues and encourages a more responsible attitude toward plastic waste and other debris. Egypt's "Go Green" initiative spreads awareness of environmental issues and emphasizes each citizen's role in protecting the environment and natural resources.

Video

Watch the video about the explorer (Peg Keiner). How does she help her students become better digital citizens and take action to improve the community?

Explore

We share and store various information online. How important is it to post accurate and truthful information online? What responsibility do we have to post information that benefits our society? Discuss with your classmates

Review

Why should we post accurate educational content with fellow students and teachers. Why is it important that this information is accurate?

Self-assess

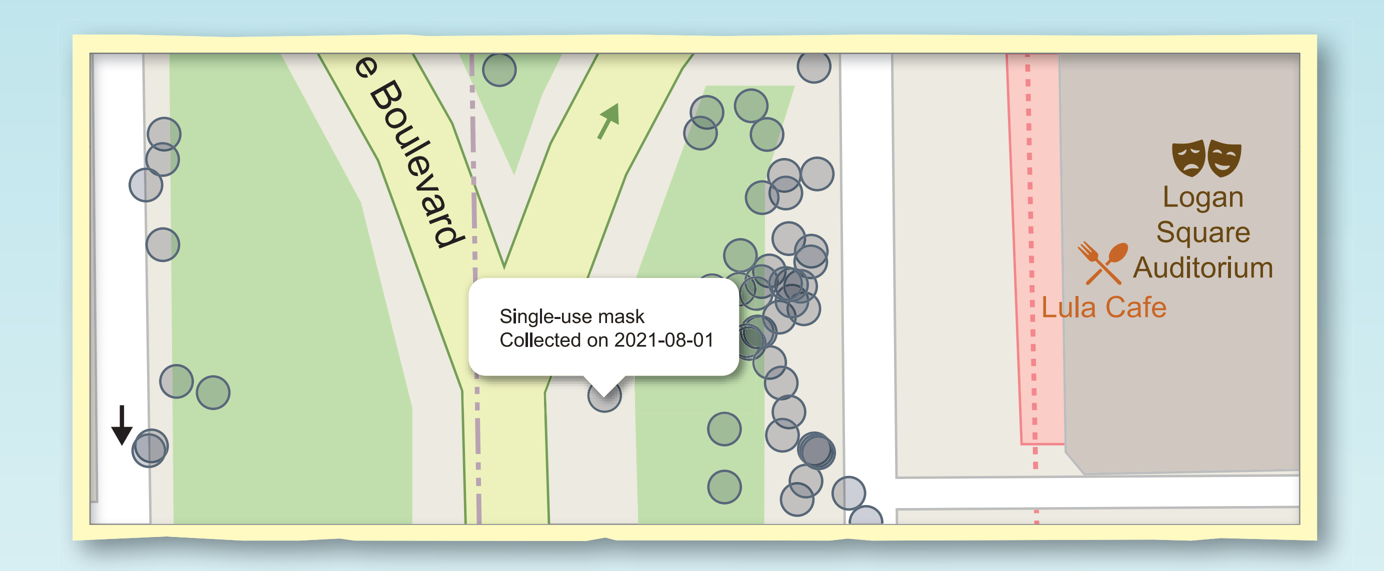
Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

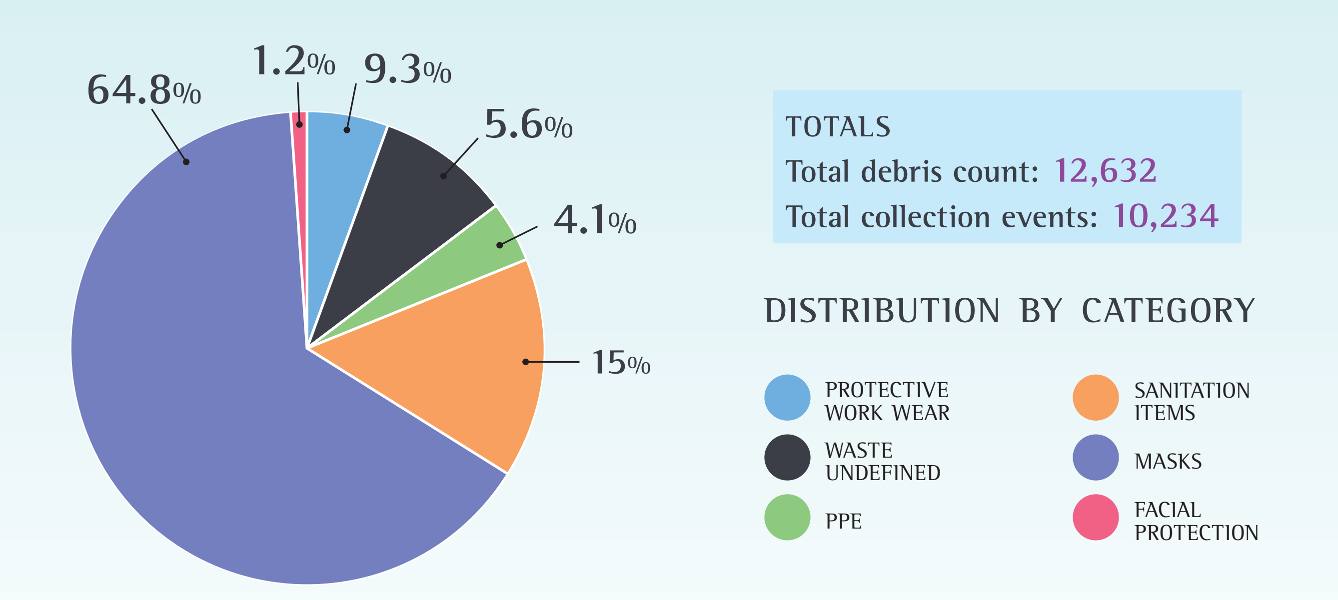
Learn by doing **LESSON 1** **EXPLORER IN ACTION**

Comprehension

1 Read, think, and answer

The Debris Tracker application collects data. The user can view and gather the data on a spreadsheet that includes the location, the material type, its date, its name and then display each type on the map as a blue dot. The data can also be viewed as a pie chart or a bar graph. The data is stored on the Debris Tracker website and is available for anyone to download and analyze.





1. Look at the pie chart. Which litter items were collected most often?

____

____

2. What is the benefit of having lots of users uploading data to the tracker?

____

____

3. In your opinion, how does analyzing the data help the environment?

____

____

4. How can we use ICT tools and social media platforms to spread awareness of important issues?

____

____

Creative planning

2 Read, think, and answer

Ms. Keiner believes that "Every walk is a debris walk; a chance to care for our home and the environment." Plan a debris walk to collect data and litter.

1. Who would you go with?

____

____

2. What kind of debris would you expect to find? Why?

____

____

3. Which ICT tools would you use? Why?

____

____

4. How would you use your data to benefit society?

____

____

LESSON 2 Digital citizenship and social responsibility

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Explain how I express my opinions online.	☐ Very well ☐ OK ☐ Need more work
• Discuss how I can use my rights and responsibilities as a digital citizen to communicate with others.	☐ Very well ☐ OK ☐ Need more work
• Explain what it means to be socially responsible.	☐ Very well ☐ OK ☐ Need more work

Engage

How can you express your opinion online or talk to someone face to face when you feel passionate about something?

Learn

Digital citizenship

You've previously learned, in grade 4, about the rights and responsibilities you have as a digital citizen.



Rights:

- privacy
- protection from piracy
- ability to engage with others online
- provide and access information online
- ability to use the internet when you need to.

Responsibilities:

- respect others' privacy
- respect various sources
- exhibit positive behavior in interactions with others
- ensure safe sharing online.

Social responsibility

Peg Keiner uses social media to spread information about how to safely get rid of the problem of PPE in the environment. You too can use the internet to help others via social media, and to contribute in social activities that help solve social issues (like improving health care, fighting pollution and the factors affecting climate change ...). **Remember:**

- Express your opinions in a positive way. Think about how you would communicate with people in person, and how to respect their opinions.
- You may have information sources like videos or articles, about a cause. Remember: Be sure that they are accurate and easy to understand. Don't spread false information.
- Make sure the information you share, and its purpose, are clear.

Being socially responsible also includes being mindful of the websites you use. If a site is spreading false or harmful information, either through their own content or content they advertise, stop visiting that site.

Corporate social responsibility

Companies also use the internet to help others, by addressing environmental concerns or supporting important causes.

This is called corporate social responsibility (CSR). Today, many companies include CSR tasks as part of their business plans, to provide help to communities around the world.

Explore

In groups, discuss the rights and responsibilities you have when you communicate online. How can you use them to help your community? Take notes. You'll need to refer to them in the Learn By Doing section that follows.

Review

1. How can your interactions online make you a stronger digital citizen?
2. Explain the concept of CSR.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box

Learn by doing **LESSON 2**

Digital citizenship and social responsibility

Comprehension

1 Look and answer

Read the posts. Check the post that's more effective. Then answer the questions that follow.

☐ **Post A**

I noticed water bottles floating in the pond at the town park. It made me upset to see our beautiful park full of trash. Let's do something about it! I'd like to organize a meet-up next Saturday at 1:00 P.M. We can clean up the park and talk about how we can keep it that way! Please comment below if you have any questions or ideas. Thank you! 😊

☐ **Post B**

I'm SO MAD. 😠 I was at the town park and there aren't enough trash cans. There is garbage all over the park, including in the pond. If you don't care about this, you don't care about your town. Do something to help!

1. Explain your choice above.

____

____

2. What would you change about the post you didn't choose?

____

____

2 Read and answer

Give an example of how you can use the internet to be socially responsible.

____

____

____

ICT and Me

3 Think and answer

Think about what you've learned about digital citizenship up to this point. How have you used this to become a stronger digital citizen?

____

____

____

Life Skills

4 Read and write

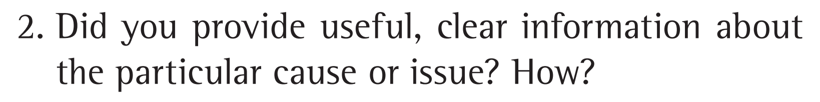


Look at your group's notes from Explore. Write a social media post reaching out to others about the ideas you discussed to help your community. Then answer the questions that follow.

1. How did you express your emotions in your post?

____

____



2. Did you provide useful, clear information about the particular cause or issue? How?

____

____

Critical Thinking

5 Think, write and discuss

Read the text on page 15 again and answer the questions. Then discuss with a partner.

1. Do you think companies have an obligation to help others through CSR? Why? / Why not?

____

____

2. If a company only helps a community out of obligation or law, does that affect your opinion on the help the company might provide? Why? / Why not?

____

____

3. How do you think being socially responsible online helps others in the real world?

____

____

LESSON 3 Online communication

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Discuss how to communicate online with people based on a variety of factors.	☐ Very well ☐ OK ☐ Need more work
• Discuss the importance of tone when communicating online.	☐ Very well ☐ OK ☐ Need more work
• Express my feelings to my colleagues using emojis.	☐ Very well ☐ OK ☐ Need more work

Engage

Think about how you communicate with teachers and classmates in person. How is it different from communicating with them online?

Learn

Tone of online communication

If you're communicating with a teacher, or a person of authority, be polite and respectful, and use titles, for example, *Mr.*, *Mrs.*, or *Dr.* Avoid making jokes. If you haven't met the person you're writing to yet, be sure to introduce yourself. Be clear about what your message is about. State your reason for sending the message up front.

If you're communicating with a peer or classmate you don't know well, be sure to use their full first name. Don't abbreviate it or use nicknames - these abbreviations or nicknames are only appropriate between close friends. It's OK to be more casual in tone when writing to a friend or family member, but remember to always be respectful.

Remember, when you are on a video call, your emotions will be visible to everyone, but feelings are more difficult to convey through written messages sometimes. Think about this as you send your communication.



Positive Online Communication

Nonverbal communication is lost online and meaning can be misinterpreted negatively because it does not explain tone of voice, gestures, posture, and eye contact. As a result, it's important to be positive when communicating online.

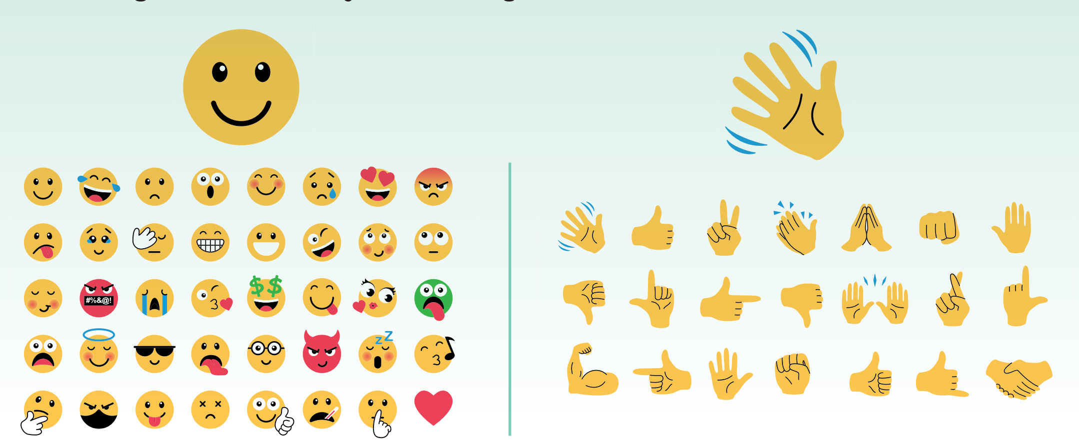
Use positive words: Set a positive tone with words such as *can and will*. Avoid negative words such as *can't*, *won't*, and *unfortunately*.

Be conversational: Add warmth with familiar words, contractions, personal pronouns and simple sentence structure. But be careful; you'll still need to use full sentences, proper grammar and correct spelling.

Use emojis: Emojis add tone and emotion. Even in more formal situations, it's usually safe to use one or two positive emojis. If you're unsure, only use emojis if the person you are communicating with uses them first.

Begin and end with positive phrases: Use friendly or encouraging phrases such as *How are you? I like your ideas for our project. Have a good weekend!*

Assume the best: It's easy to misinterpret online communication in a negative way. When this happens, try to identify the person's meaning, rather than assuming they meant to be negative or hurt your feelings.



Explore

You need to reach out to someone in school for help with a task or matter.

- Choose the person you will reach out to and the task/matter you need help with.
- Choose between writing an email or posting a message on the person's social media site. What will the tone of your message be? Explain your choice.
- Write your message and share it with the class.

Review

1. Why is it important to consider your tone?
2. How might employees use this information when communicating with employers and fellow co-workers?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing **LESSON 3**

Online communication

Comprehension

1 Read and answer

Choose the form of online communication you would use and explain your choice. You want to...

1. ask your teacher to help you with an assignment. ____________________
2. invite your friend to come over this weekend. ____________________
3. share ideas for a community or school event. ____________________

Life Skills

2 Read, write, and answer

Choose one of the following subjects to write a short email about:

- an event or class assignment at school
- your weekend plans
- a social issue you're involved in
- other (your own subject choice).

1. Write an email to:
   a) your teacher or person in authority and
   b) a close friend or classmate about the subject.

Remember: Consider your audience's personalities as you write your emails.



2. Read your emails. How are they similar? How are they different?

____

____

3 Think and answer

Why might someone decide to use a video chat to communicate instead of a written form of online communication?

How does a video chat with classmates and teachers differ from one with friends or family members?

Issues and Challenges

4 Think, write, and discuss

If you were using social media applications and noticed comments that you didn't find appropriate, how would you react? Who would you reach out to?

ICT and Me

5 Think and answer

How do you prefer to communicate with teachers and classmates - in person or online? Why.

LESSON 4 Information websites

Objectives

By the end of the lesson, I will be able to:

- Discuss what's included on information websites.
- Explain the tools and features that make a website easier to use.
- Identify tools that can be used to create websites.

After the lesson, check the correct box: **I can . . .**

☐ Very well ☐ OK ☐ Need more work

☐ Very well ☐ OK ☐ Need more work

☐ Very well ☐ OK ☐ Need more work

Engage

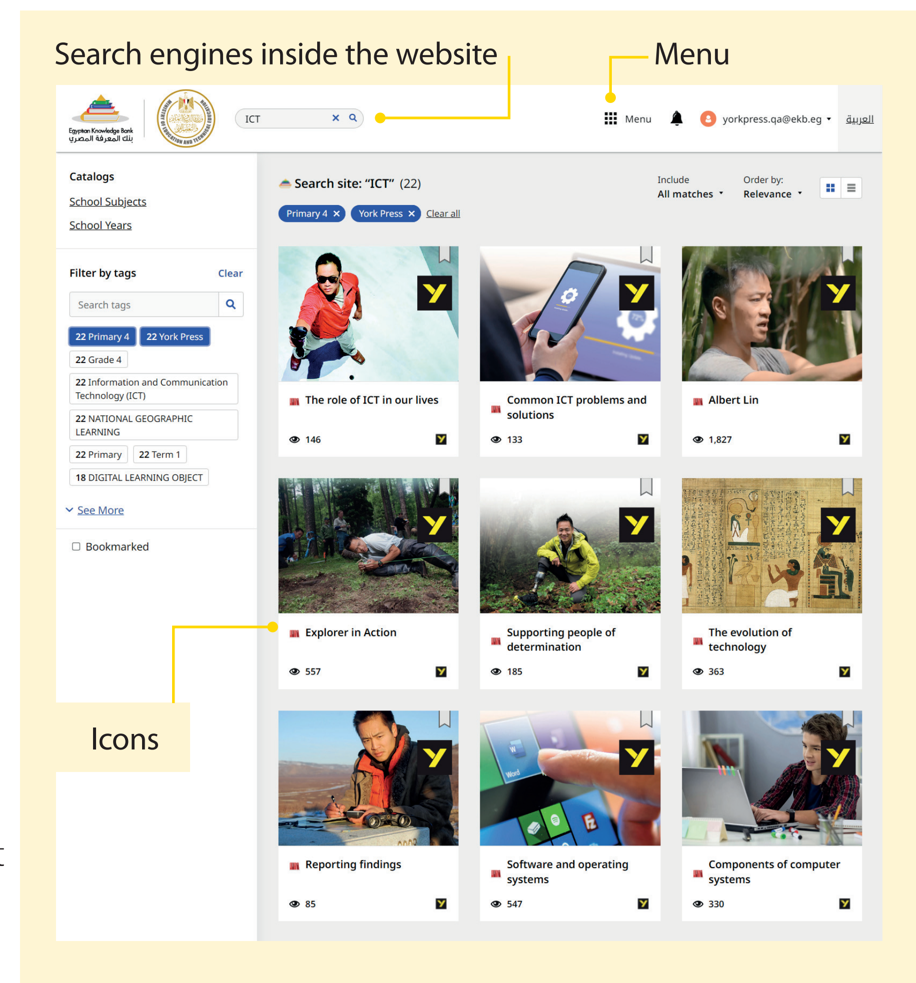
What websites do you use? How easy or difficult are they to use? How do the layouts and features affect your experience?

Learn

Information websites

The Alexandria Digital Library, and the Egyptian Knowledge Bank are examples of reliable online libraries. For example, the Egyptian Knowledge Bank (EKB) offers:

- the world's largest collection of online educational resources, including articles, dictionaries, encyclopedias and books, and video, audio, and interactive files
- files can be downloaded to your device
- content suitable for all ages
- safe and accurate sources
- free access for all Egyptian citizens
- material that is subject to copyright.



Helpful website features

Search engines inside the website are found directly within a web page and provide results based on what you type in the field. The EKB and ADL content have specialized search engines.

Menus also help you to find information. They help you to avoid scrolling and spending too much time looking for general information. They include clear titles and content information.

Icons can be clicked to reach other sections or webpages.

Contact and **About** fields are easy to find so visitors can contact or learn more about the people involved in a website. **About** link may include taglines – short pieces of information to provide an overall theme of the website.

Website Creation

Software programs like WordPress are used to create websites. When you start creating your website, you can choose a blank template or choose one of the software's pre-loaded templates. Once you choose a template to work with, you will be able to access free design tools to create your website.

Note: When creating a website, be sure to consider the photos and videos, and font size/type. You want your site to be user friendly and visually appealing.

Explore

With a partner, discuss what you would include on a website if you created your own. What would you like your website to be about? How could you use it to give information that could help others? Think about how you would design your website and the features that you would include. Take notes – you'll need to refer back to this section when you design your own website in Learn By Doing!

Review

1. How can you use online sources to help you research a topic? Of The Alexandria Digital Library, and the Egyptian Knowledge Bank, which do you think you'd use? Explain your choice.
2. Think about the Microsoft Office presentations you've created using Word, Excel, and PowerPoint. How can what you learned about making presentations help you to create a successful website? What features are important to show information clearly in a presentation? How are these features also relevant when creating a website or information page?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can ... box



Information websites

Research

1 Review and write

1. Go to one of the following information websites - The Alexandria Digital Library, or the Egyptian Knowledge Bank. Navigate the website, taking notes on its features and overall design. Write notes below.

____

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2. Perform a search using the search engine on the site you chose. What did you type and what were the top three results?

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Life Skills

2 Read and create

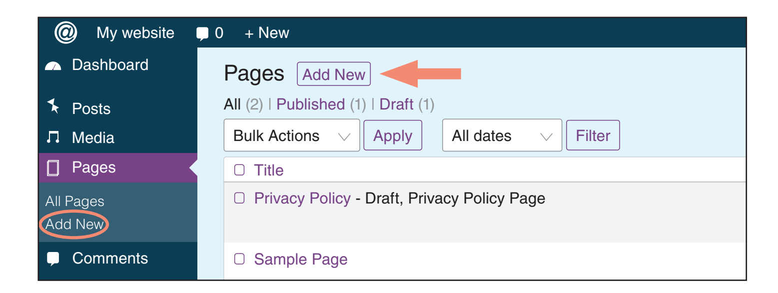
Let's use tools to create a website home page! Use your notes from Explore as you work through the steps.

1. Write your suggested website's title and a tagline to explain what it's about.

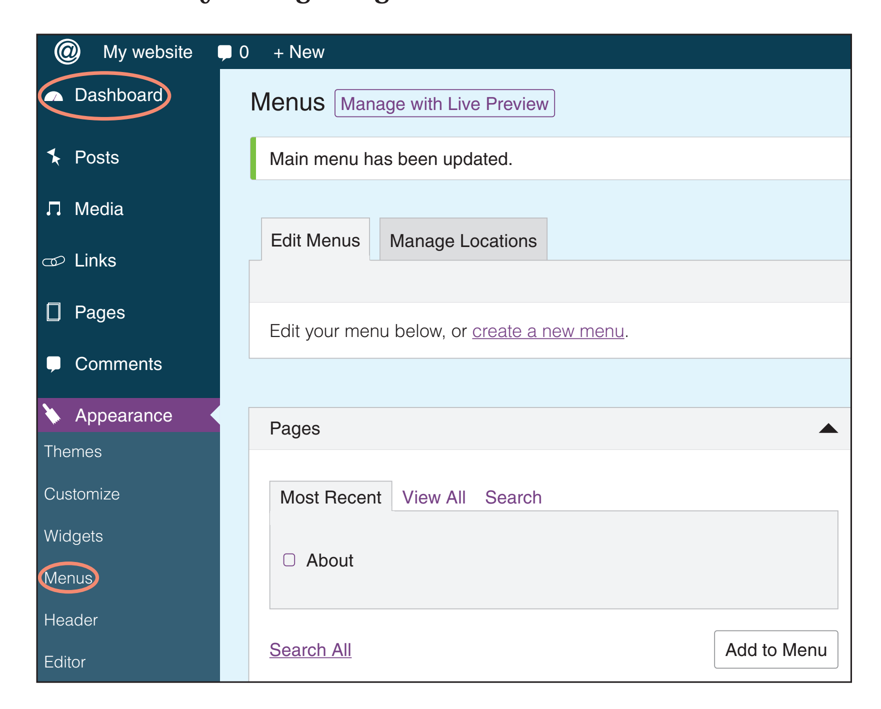
General Settings

Site Title	My website
Tagline	Welcome to my website
	In a few words, explain what this site is about.

2. Design your homepage. Remember that this is the first screen a visitor will see when visiting your site. Make sure it's appealing and your theme is clear. Also, add a *Contact* and *About Me* page on the website.



3. Add menus for easy navigating.



ICT and Me

3 Think and answer

1. How did your experience of visiting other websites affect the choices you made while creating your own?

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2. What tools do you think are the most helpful when creating a website? Explain your choices.

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LESSON 5 Commercial and non-commercial internet services

Objectives

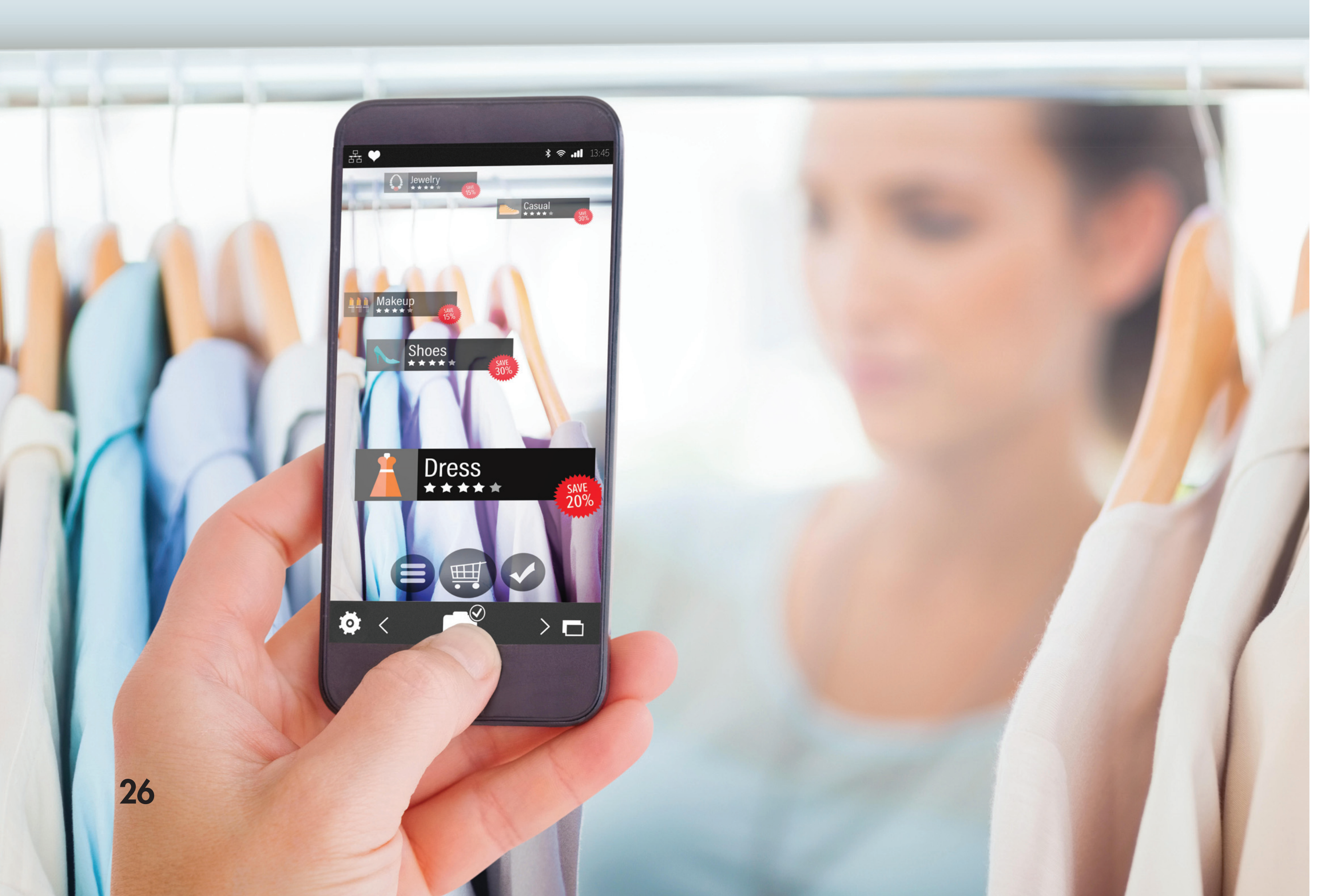
By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Identify the difference between websites (commercial/non-commercial).	☐ Very well ☐ OK ☐ Need more work
• Discuss how I can use the internet to acquire information about products.	☐ Very well ☐ OK ☐ Need more work
• Clarify how my online activity affects the advertisements that appear.	☐ Very well ☐ OK ☐ Need more work

Engage

How much do other people's opinions of things or services affect your decision to buy or use them?

Learn

Websites are either commercial or non-commercial. The purpose of commercial websites is to sell products or services. Amazon is an example of a commercial website. Commercial websites often include customer reviews, which can be helpful to both the business and the customer. Reviews help customers decide if they want to buy a particular product or not.



The purpose of non-commercial websites is to provide information or raise awareness on an issue. The Egyptian Knowledge Bank is an example of a non-commercial website.

Be wary of fake reviews. They're usually written because a business wants to make their product seem more appealing, so they write their own positive reviews or have family or friends do it. Sometimes a rival business will post negative reviews under a false name on their competitors' sites to prevent potential customers from making a purchase.

Some reviews may not be entirely fake, but they may be misleading. A review that's overly positive or negative shouldn't be trusted. Extreme reactions to products aren't usually good indicators about a product or service's true value.

Reviews are one way you can get information about a product. Another way is via advertisements. Websites can use information about the sites you visit, and in any online accounts you have, to place advertisements, that are geared towards your interests, geographic location, age, and gender. For example Rami likes to watch videos about football, his favorite sport. He also likes electronics and looks up the latest gadgets. When Rami is watching videos online, the advertisements that pop up are often for sporting goods, or computer products. If Rami visits a certain website, or focuses on a specific brand, that brand might pop up more whenever he visits other websites.

Explore

Choose a partner. Talk about how buying things online differs from buying things in a shop. Discuss how seeing something online can impact your desire for the product, and how online reviews and advertisements can influence your online shopping habits.

Review

1. With your teacher's help, name one commercial and one non-commercial website that you have visited or know about. Explain how you know they are commercial/non-commercial.
2. Based on your internet activity, or interests, what types of online advertisements do you think would pop up on your screen most often?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing

LESSON 5 Commercial and non-commercial internet services

Comprehension

1 Read and answer

Read the reviews. Check the one that seems more reliable. Then explain why.

Username: jbd_123 ★☆☆☆☆
Comment: I WOULD GIVE ZERO STARS IF I COULD! JUST AWFUL!

Username: Reem_Salah ★★★★☆
Comment: Overall, I like this product. I like how easy it is to use. The plastic seems a little cheap, but the product works well overall. I recommend it.

____

____

2 Write a review

Think about an item you, or your family, recently purchased. Write a helpful review for the product. It doesn't have to be positive!

Name of product: ______________________________

Rate it from 1-5 stars: ☆☆☆☆☆

Comment: ______________________________

____

3 Evaluate data

Read about Amira's usual internet activity. What kinds of advertisements might she come across while watching videos online?

Amira's internet activity:
- Logs in to online services through her own account.
- Likes to watch funny videos that feature pets.
- Watches videos and reads articles about different places to hike.

____

____

Critical Thinking

4 Think and write

1. How can negative reviews about a company's products harm sales? How can that be fixed?

2. Do you think it's an invasion of privacy to have your internet activity tracked? Why? / Why not?

ICT and Me

5 Think and answer

If you could create your own website, would you want to create a commercial or non-commercial one? Explain your choice.

LESSON 6 Using ICT for content creation

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box. **I can …**		
• Discuss the use of Microsoft Edge for locating and organizing research.	☐ Very well	☐ OK	☐ Need more work
• Discuss the use of Microsoft Editor for spelling and editing.	☐ Very well	☐ OK	☐ Need more work
• Collaborate with peers using Office 365 tools.	☐ Very well	☐ OK	☐ Need more work

Engage

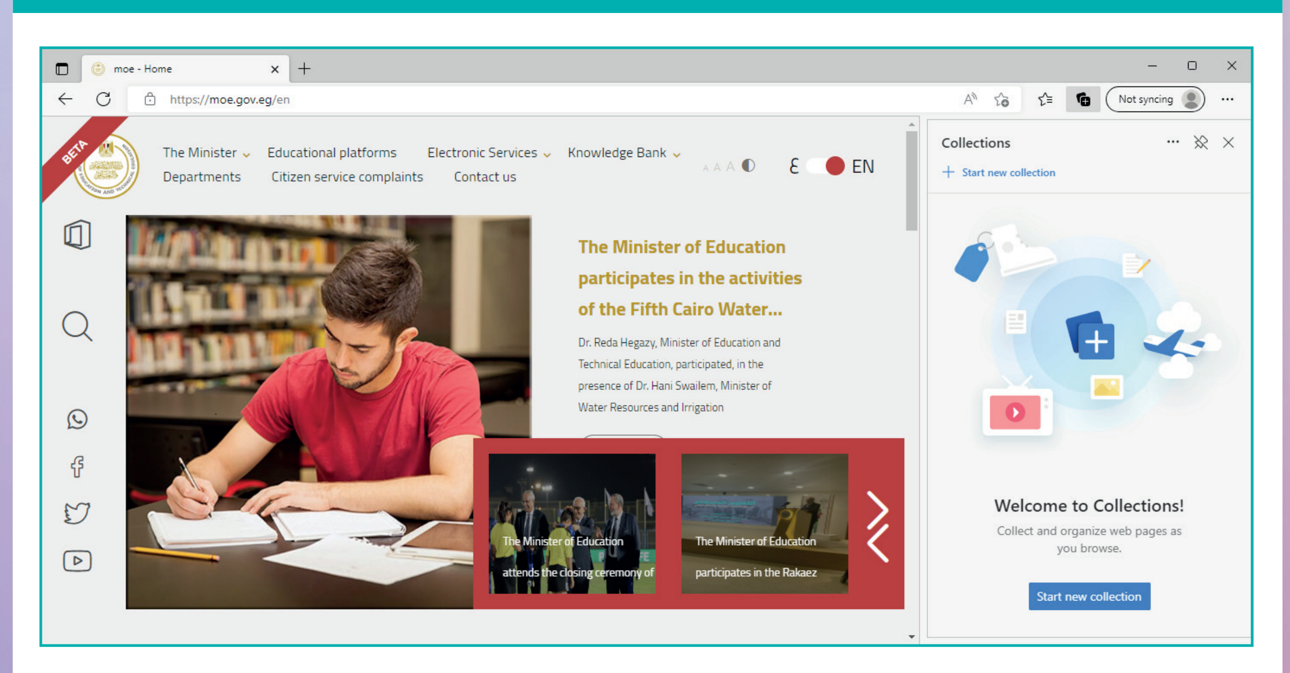
Discuss what you do to plan, organize, create, and present research projects you're assigned.

Learn

Microsoft Edge is the web browser that comes with Microsoft Windows. The browser can help you browse, search, stream and more.

The Collections feature in Microsoft Edge organizes research in one place and on multiple devices. You can start a collection for each new project or assignment. Within each collection you can add entire web pages, but you can also add individual videos, images (including charts and graphs), text, links and notes. You can also export each collection to other apps such as Excel and Word.

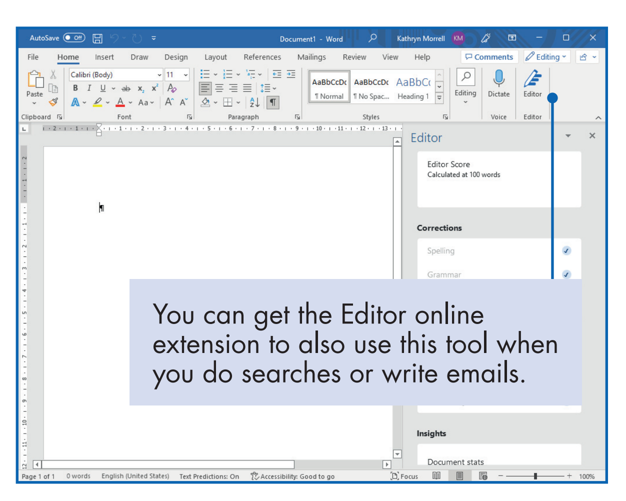
Collections – Microsoft Edge



To start a collection (you can ask your teacher for help in downloading programs):

- Select *Collections* on the toolbar.
- Select *Start a New Collection.*
- Type the title of your collection in the box.
- Add content by selecting *Add current page.*
- *Drag an image* into the collection.
- Select text or links and drag them into a collection.

Writing help – Microsoft Editor



Use Microsoft Editor to check for spelling and grammar. The editor will highlight problems such as capitalization errors, sentence fragments and missing or incorrect words and punctuation and make a suggestion to correct each error. You decide whether to accept or ignore each suggestion.

Other tools (or Refinements), such as punctuation conventions and vocabulary are also available.

- Select the *Editor* icon in Word's toolbar, or in the browser, to review possible grammar and spelling errors and refinements to improve clarity, formality, and conciseness.

Explore

As a class, practice using Microsoft Edge and Editor you've read about in Learn. Your teacher will help you. Then work in groups to discuss how you think these tools will help you for future research projects.

Review

1. Explain how the two programs can help you with school projects.
2. Which of the two programs are you most excited about using for your next project? Explain why.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



Using ICT for content creation

Life Skills

1 Work with a partner

1. Research how advertisers market products to children.
2. Use the Microsoft 365 tools you learned about to plan and organize your research.

Collections

Go to **Collections** ⊞ at the top right corner of Edge and click **Start new collection.**

Give your collection a name.

To add content to your collection, you can:

- choose '*Add current page*' to save a webpage.
- choose and drag an image to the collection.
- choose and drag a link to the collection.

Editor

The Editor will highlight words or phrases which may be incorrect and also suggest alternatives, to help you edit your text.

ICT and Me

2 Think and answer

Write about your experience collaborating with your partner.

1. Which Microsoft 365 tools were you more comfortable using? Why?

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2. Which Microsoft 365 tools did you have trouble with? How can your teacher help you?

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LESSON 7 How to choose online sources

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Determine the uses of information web sources available online.	☐ Very well ☐ OK ☐ Need more work
• Explain how to tell which sources are more reliable.	☐ Very well ☐ OK ☐ Need more work
• Create a presentation using reliable sources.	☐ Very well ☐ OK ☐ Need more work

Engage

What do you look for when determining if an internet source is appropriate for a task? How does evaluating sources make you a better digital citizen?

Learn

In Lesson 4, you learned about reliable online reference sites and their features. Now let's take a closer look at how you might use them for research.

USING SOURCES FOR RESEARCH

1. ONLINE LIBRARIES

These are helpful for searching different media, such as images or videos. Online libraries sometimes include dictionaries, thesauruses, and encyclopedias, but these are also on separate sites, too. Make sure they are verified.

A Creative Commons search is a resource to find copyright-free information. Be wary of what you find. Not all sources posted there are verified or accurate. Online libraries such as the Alexandria Library and the EKB have secure, verified information.



2. ONLINE MAPS



These can provide clear and accurate directions to the required places such as Google Maps. If you need to display a street, or an area map, always check online maps with the help of your ICT, or social studies, teacher in your school. Google Maps are considered accurate and are regularly updated.

3.



ONLINE MUSEUMS

These can also be wonderful reference sites that allow you to view museums digitally, and they generally include information about each museum.

4.

SPECIALIZED SEARCH ENGINES

Specialized search engines such as Google or Bing are very useful. Try to use appropriate keywords in your search, otherwise some results might not be relevant. General search engines are also useful, but may lead you to unreliable pages or – even worse – unsafe pages.



5.



A WEBSITE'S META INFORMATION

Websites include meta information, such as keywords, information about the site, and what it contains. When you use a search engine and get a set of results, the information that is below each link is the meta information for the site. This allows you to read more about the site before clicking on the link.

At the bottom of websites, there is usually information such as a copyright notice, logo, contact information, and social media icons. Clicking on these links can help you decide if the site is reliable.

Explore

In Learn By Doing, you are going to create a presentation about an important Egyptian event or celebration. Choose your topic and write it down. With a partner, discuss how you can use what you learned about the following:

- analyzing websites.
- knowing when, and how, to use different information websites and applications.
- include an e-museum in your research.

Write notes on your discussion.

Review

1. Compare the information pages included in Learn. How is each one used?
2. Explain how meta information can aid you in analyzing search results.

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can ... box

Learn by doing

LESSON 7 How to choose online sources

Comprehension

1 Read and write

Create an advice poster to help others understand when, and how, to use the different online sources discussed in the lesson.

Research

2 Plan your research

Use your notes from Explore to get started.

1. Write the name of your topic here:

____

2. What do you want to find out about the topic?

____

____

____

3 Carry out your research

How will you use what you learned to help you with your research? Use your notes from Explore.

4 Create and present

How will you use what you learned to help you create your presentation? Use your notes from Explore. Then, create your presentation and share it with the class.

5 After your presentation

Answer the questions.

1. Write about your experience researching your chosen event or celebration. What do you think went well? What would you do differently next time?

LESSON 8 Choosing between synchronous and asynchronous communication

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Clarify the reasons for using online communication tools.	☐ Very well ☐ OK ☐ Need more work
• Explain online communication ethics to use.	☐ Very well ☐ OK ☐ Need more work
• Communicate effectively online.	☐ Very well ☐ OK ☐ Need more work

Engage

Can you think of a time when you had to communicate with someone in person? Would you have been able to have the same conversation over video chat or another online method? Why? / Why not?

Learn

Synchronous communication is real-time communication between people, with everyone interacting and taking in information at the same time using digital tools such as video chats, live television shows, and instant chat rooms.

Asynchronous communication is communication that does not occur in real time and does not require an instant response. Ansynchronous communication tools include email, voice and text messages and recorded videos.

Synchronous communication is useful when you are writing about a lighthearted, everyday matter to friends or family and you need an immediate or quick response.

Asynchronous communication is useful when you are writing about serious or complicated matters with someone you don't know well or with someone in authority and you don't need an answer right away.

Whenever you're communicating, you should respect the following:

Be polite. Remember what you learned about the importance of tone. Even if you're upset about something, do not use language that could be upsetting to the recipient. Respect the recipient's feelings.

Be patient. Even if you're sending a message to a close friend, remember that he/she may still need time to respond or may be busy. Give him/her time to respond before sending another message.

Be helpful. Part of being a good digital citizen is helping others. Use what you've learned to help those you're communicating with. It could be a problem they're having, or something they need help doing. If they need help with online communication, share what you know.

Be clear. It's easy for misunderstandings to occur when communicating online. Always be sure your message is clear. Read it back to yourself before you send it. Could the recipient misinterpret it? If so, revise it before sending.

Explore

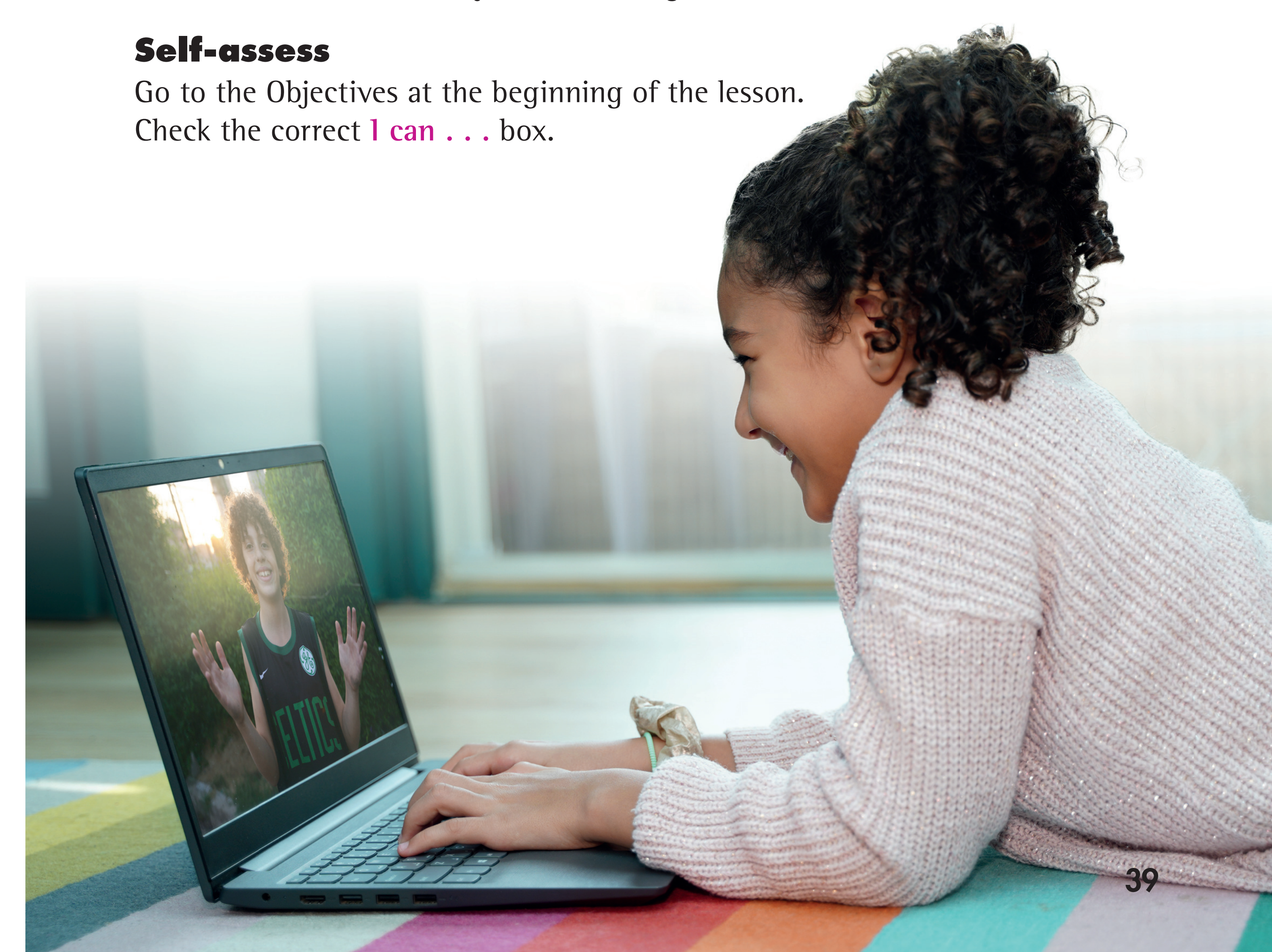
In Learn By Doing, you're going to communicate your feelings about the presentation you worked on in Lesson 7. Decide who you'll communicate with. Will you use synchronous or asynchronous communication? What tool will you use (email, chat, text, etc.)? Discuss with a partner.
Write notes on your discussion.

Review

1. Explain why you might choose to email a close friend instead of texting.
2. How does understanding when and how to use different forms of online communication make you a better digital citizen?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



Learn by doing **LESSON 8**

Choosing between synchronous and asynchronous communication

Comprehension

1 Match

Draw a line from each tool to the correct communication type.

video chat •		• voice message
podcast •		• text message
	• synchronous •	• social media post
recorded videos •		• social media message
	• asynchronous •	• blog
instant chat rooms •		
email •		• live television show

2 Read, think, and write

Read these situations and decide which type of communication you would choose to use. Give a reason for each choice you make.

1. You want to tell a close friend about your day.

____

____

2. You want a family member's opinion about a problem you're having.

____

____

3. You want to ask your teacher for extra help.

____

____

4. You want to ask a classmate a quick question about a school project.

____

____

Life Skills

2 Communicate electronically

It's time to communicate electronically with the person you chose in Explore. Send your message to your chosen recipient.

Remember: If you need help sending your communication, ask a teacher or family member.

3 Think and answer

1. Who did you choose? Why?

____

____

____

2. What type of communication did you use? Explain your choice.

____

____

____

3. Was your language formal or informal? Explain why.

____

____

____

ICT and Me

4 Think and answer

You have sent results of your research using a type of digital communication.

1. How did what you have learned in Theme 3 give you confidence to complete the task?

____

____

____

2. What might you do differently next time?

____

____

____

REVIEW Theme 3

Vocabulary

1 Write and compare

Write a sentence for each set of words to explain the connection between them. Then compare your sentences with a partner.

1. digital citizenship and social responsibility

____

2. specialized search engines and meta information

____

3. reviews and video advertisements

____

Review Questions

2 Read and answer

1. Write a sentence on how to embrace digital citizenship and social responsibility.

____

2. How can you show mindfulness when choosing a website to visit or online shop to purchase from?

____

3. Give one example of when you might use formal language when communicating online on one example of informal language.

____

4. How are specialized search engines different from general search engines?

____

5. What is a commercial website? What is a non-commercial website?

____

6. What is the Collections feature in Microsoft Edge? What can you add to a collection?

____

7. How do you search online for a digital museum? What do you use it for?

____

8. Explain when you might communicate with your teacher using synchronous communication and when you might use asynchronous communication.

____

Critical Thinking

3 Think and answer

1. How has what you have learned in Theme 3 made you a stronger digital citizen?

   ____

   ____

2. Do you feel it's unethical for businesses to post reviews by family members and friends? Why? / Why not?

   ____

   ____

3. Explain how different digital resources can help you when carrying out research for school topics.

   ____

   ____

Essential Question

4 Think and complete

After studying this theme, I know that I can use ICT tools to connect with people all over the world because ______________________________

____

____

Activity

5 Research, create, and show

Research a famous person that you admire. What makes the person admirable? Use your research to create a presentation using Microsoft 365 tools and show it to the class.
Include the following:

- name the famous person that you chose
- specify what this person does
- give three interesting facts about this person
- write some achievements of this person

Invite your classmates to view your presentation



THEME 4

Software Projects

ESSENTIAL QUESTION:

How can ICT tools help solve problems in our everyday lives?



SPOTLIGHT on **Theme 4**

In this theme, you will learn more about the inner workings of ICT tools. You will also look at binary numbers and what they are. You'll learn the importance of planning projects in advance and how to use Excel, PowerPoint, and websites to present and share information in an appealing way.

National Geographic Explorer Diego Ponce de Leon uses remote sensors to improve energy efficiency.



EXPLORER IN ACTION

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Identify ways of using sensor networks to collect data.	☐ Very well ☐ OK ☐ Need more work
• Research how technology was used to solve problems.	☐ Very well ☐ OK ☐ Need more work
• Think of ways to solve problems using technology.	☐ Very well ☐ OK ☐ Need more work

Engage

How does technology help you in your everyday life? How do you use it to overcome challenges?

Learn

Dr. Diego Ponce de Leon holds a PhD from the Energy and Resources Group, University of California Berkeley. He develops the use of technology to build renewable energy-related data infrastructure and systems. These data systems allow him to collect data on power grids in order to improve the power system and reduce energy waste.

The world has recently made a lot of progress in transitioning away from power generated by fossil fuels derived from coal, natural gas, and oil. Instead, wind and solar power are being used. Energy efficiency is important too. Dr. Ponce de Leon's work helps devices work efficiently by connecting all the refrigerators and air conditioners together by a thermostat, a switch that measures temperature in air conditioners and refrigerators, and programming a computer to monitor and control them. He used sensors (devices which communicate information back to a computer) to monitor the appliances, and he used his knowledge of software to program the air conditioners and refrigerators in a new, energy-efficient way.



In addition to using sensors to monitor and control the devices, Dr. Ponce de Leon used the sensors to monitor how much energy the refrigerators and air conditioners used throughout the day. How much electricity a town uses changes throughout the day – more energy is used by air conditioners in the afternoon in summer because it is very hot out! By monitoring how much energy is being used, Dr. Ponce de Leon was able to balance the power grid by moving and storing the electricity from one place to another so that the amounts are more equal. In this way, he could recommend ways to save electricity and build better energy systems in the future.

In Egypt, a similar system is being used for a different reason. Egypt has been increasing its agricultural land to ensure food security. To ensure water is being used efficiently in newly reclaimed areas, a data and information management system was built. The system is based on monitoring and remote sensing data. This data helps engineers make decisions and improve the irrigation systems.

Using technology to collect data is crucial in planning for the future.

Video

Watch the video about Dr. Diego Ponce de Leon. What major problems do you think he faced?

Explore

"There is a solution to everything. We may not have found it yet but it exists." How true is this statement? How has technology today helped us solve past challenges? What problems can technology create? Discuss with your classmates.

Review

1. Egypt is striving to increase its resources to meet the needs of its citizens. Express your opinion about this.
2. How can ICT tools be used to solve the problems you face?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



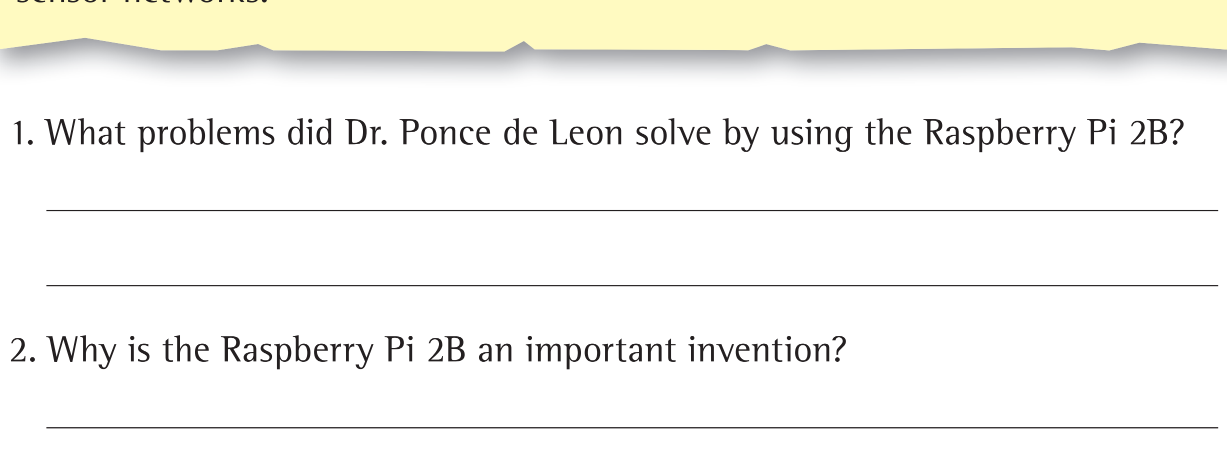
EXPLORER IN ACTION

Comprehension

1 Read, think and answer

Dr. Ponce de Leon used a small, inexpensive computer called a Raspberry Pi 2B to manage the processing and storage of data, as well as run software. Raspberry Pi is a simple computer that you can program to turn lights on and off, read sensors, and record data. You can plug in a keyboard, monitor, and mouse to this very small computer that fits in your hand. It's easy to code. With a basic knowledge of coding language, you can program the computer to do practical things. For example, students programmed their Raspberry Pi to sense when the plants in the school garden were dry, and the computer started the watering system!

People worldwide use the Raspberry Pi to learn computer programming. They also use it to build hardware projects such as Dr. Ponce de Leon's sensor networks.



1. What problems did Dr. Ponce de Leon solve by using the Raspberry Pi 2B?

____

____

2. Why is the Raspberry Pi 2B an important invention?

____

____

Research

2 Search and write

Use the internet to research the problems and technological solutions that might prevent you from finding data.

____

____

____

Creative planning

3 Think and write

Your school principal has asked you to think of ways to upgrade your school. What technological solutions can be applied? Write your ideas in the table.

Problem	Technological Solution
The library is too small to add more books.	
The cafeteria gets too crowded during the break.	
It would be great to have a field trip once a week but there is no budget for it.	

Think and answer about me

4 Think and answer

Think about the technological solutions in exercise 3. Then answer the questions.

1. Which one would you like to apply in your school? Why?

____

____

2. Who would benefit from this solution?

____

____

3. How would they benefit?

____

____

LESSON 2 How digital devices work

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Explain how to install computer software safely.	☐ Very well ☐ OK ☐ Need more work
• Discuss how to make computer software updates.	☐ Very well ☐ OK ☐ Need more work
• Explain how to troubleshoot screen freezes.	☐ Very well ☐ OK ☐ Need more work

Engage

What factors do you or would you consider when deciding to install software on your devices?

Learn

Tips for common ICT issues



INSTALLING SOFTWARE | Most software programs, like Microsoft Office versions and Google Chrome, are downloaded from the internet.

How to install software:



Windows PC: Find the program online. Click the download button. Click on the file, located in Downloads. A box will pop up. Follow the instructions to finish the installation process.



Android device: Tap on the Apps icon. Go to the App store (Google Play stores). Find the app you're looking for and click install.

REMEMBER

If you don't use official stores, only download software from reliable sources. If you're unsure, or facing problems, you can ask your teacher for help.



UPDATING SOFTWARE | Software programs often need to be updated. Updates help programs to run more efficiently. Many programs install necessary updates automatically.

How to install updates:



Windows PC: Some major updates require a restart. Windows will prompt you when this is the case. To manage updates, go to the following: *Start* button ➔ *Settings* ➔ *Update and Security* ➔ *Windows update.*

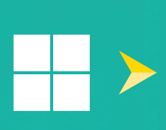


Android device: To check for updates, go to *System* ➔ *System Update*. Here, you will find updates that still need to be installed. Tap on the icon and follow the instructions to install the necessary updates.



Troubleshoot screen freezes |

Sometimes, when you're downloading or updating software, your screen may freeze. If this happens:



Windows PC: Press and hold the "Ctrl," "Alt," and "Del" buttons and use the Task manager to shut down any program that is marked as "not responding." If that doesn't work, turn your device off by pressing and holding down the power button for several seconds. Then wait a few more seconds before restarting your device.



Android device: Hold down the power button for 30 seconds and restart.

Binary numbers system |

Computers use binary to store data more efficiently. Think of binary numbers as a language that the computer understands. Understanding binary will help you to better understand what's going on when investigating a computer problem.

Computers understand data (numbers) through a binary electrical signal (1 means on, 0 means off)

The binary system uses the two values 1 and 0 to express the binary numbers system.

Explore

How can ICT help you in your everyday tasks? Work in a group to discuss the ways that help you with that. Make notes and share them with your classmates.

Review

How can you ensure safe installation and updating of computer programs?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box



How digital devices work

Comprehension

1 Read and write

1. You want to download a new program. Explain the steps you should take to download it. Be sure to specify whether you're downloading it using a Windows PC or an Android device.

____

____

2. Look at your answer to the previous question. The program you downloaded needs to be updated. Explain the steps you should take to update it.

____

____

2 Look, think, and write

1. Look at this. Why does it look strange at first sight?

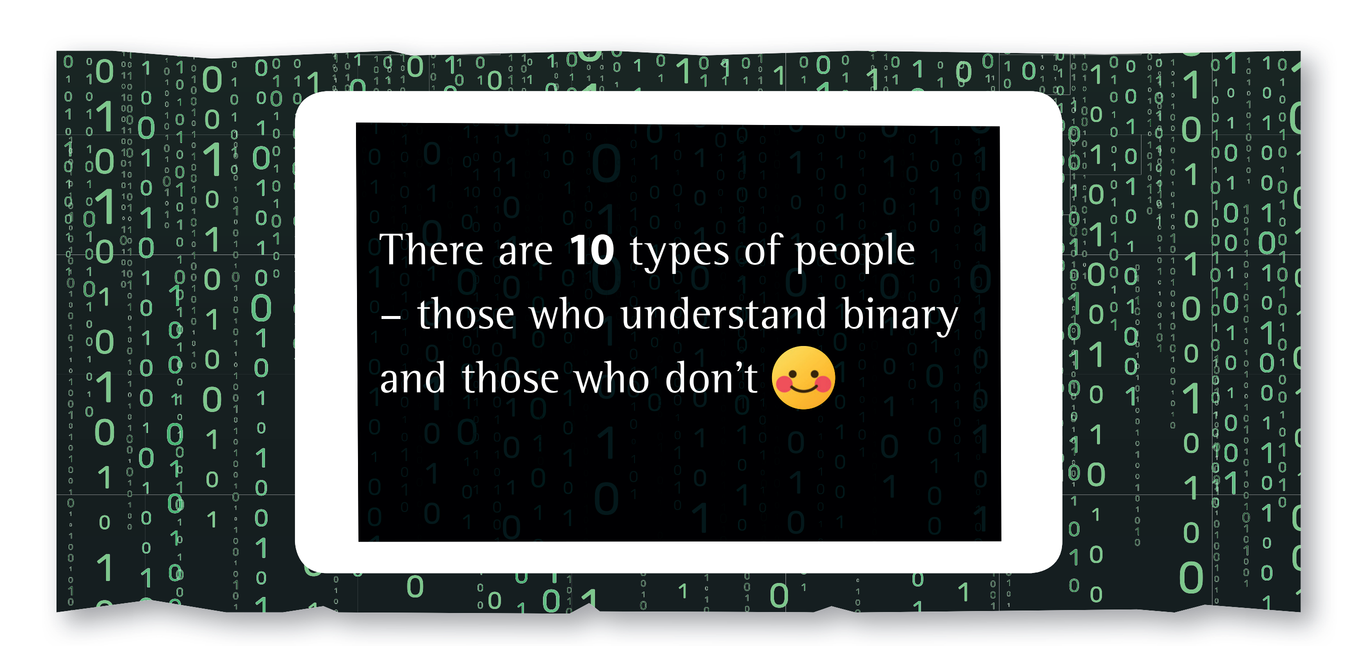
____

____

2. Which number system do computers recognise? Why do you think this system is known as a 'base 2 system'?

____

____



Critical Thinking

2 Think and answer

1. Think about what you've previously learned about possible ICT problems and what you've learned in this lesson. Why might your device freeze while you're updating or using a program?

ICT and Me

3 Think and answer

Think of a computer program you'd like to download.

1. What would it do?

2. Why would you want or need it?

3. How would it be a positive addition to your life?

Explain to a family member or a friend how to use a computer program that you like, for example Google Maps, Skype, or Microsoft 365. Then answer the questions.

4. What program did you choose?

5. What did you share about the program?

6. How did it feel sharing what you know with others?

LESSON 3 An introduction to binary numbers

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain why computers use the binary number system to store data.	☐ Very well	☐ OK	☐ Need more work
• Describe the binary number system.	☐ Very well	☐ OK	☐ Need more work
• Read and write binary numbers.	☐ Very well	☐ OK	☐ Need more work

Engage

How do computers send, receive, and store information?

Learn

Although computers can perform amazing tasks quickly, they really only understand information represented by 1s and 0s, something also called yes/no, on/off.

This is the binary number system and it's used to send, receive and store information on digital electronic devices such as computers, phones and calculators. But how can all information be represented by only two numbers? Thinking about a more common number system can help.

Humans use the decimal system to communicate using numbers. The decimal system has ten unique numerals (0-9) and is therefore also called the base ten system.

We use these ten number symbols to represent all possible numbers. That means that once we count past the number nine, we add one of the ten unique number symbols as a digit on the left.



Counting from the right, each place represents a value ten times as big as the previous one. We use this system so much that we don't even realize the steps we have to go through to get a number such as "157" (multiply the right-most number by 1, multiply the middle number by ten, and multiply the left number by 100).

1	5	7
x100	X10	x1
100	50	7

Binary has just two unique numerals (1 and 0) and is therefore called a base two system. Just like the decimal system, when binary runs out of unique digits, it adds a digit on the left. Counting from the right, each place represents a value two times as big as the previous one, and so is a quantity of 1s, 2s, 4s, 8s, 16s, etc.

Decimal	Binary					
		....	....	....	..	.
		x16	x8	x4	x2	x1
1	1	0	0	0	0	1
2	10	0	0	0	1	0
3	11	0	0	0	1	1
4	100	0	0	1	0	0
5	101	0	0	1	0	1
6	110	0	0	1	1	0
7	111	0	0	1	1	1
8	1000	0	1	0	0	0
9	1001	0	1	0	0	1

Computers are simple and efficient. Just like a light switch, the most simple, efficient design for computer wires and circuits is to allow only two states: on and off. That's why the binary number system works so well for sending, receiving and storing digital information.

Explore

Work with a partner to write the binary numbers for 10-20. Then study your answers. What patterns do you see in the numbers? What is the largest binary number you can write without adding another column?

Review

1. How are the decimal and binary number systems similar? How are they different?
2. The number 101 is read as "one hundred one" using the decimal system and "one zero one" using the binary system. Why do you think the two systems use different ways to say numbers?

Self-Assess

Go to the Objectives at the beginning of the lesson.

Check the correct I can . . . box



An introduction to binary numbers

Comprehension

1 Read and answer

1. Read the quote below. Why does it look strange at first sight?

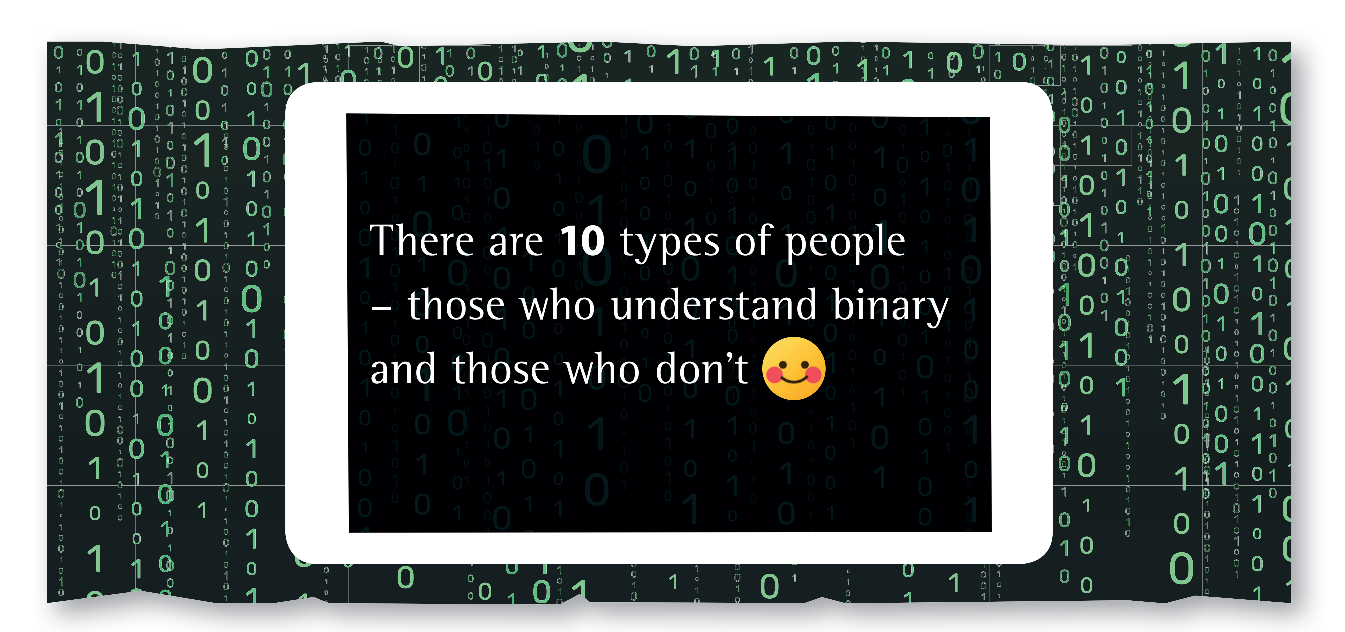
____

2. Which two number systems are referenced in the quote below?

____

3. What does the quote mean?

____



Critical thinking

2 Think and write

1. Change these binary numbers into decimal numbers.

Binary					Decimal
1	1	1	0	0	
1	0	1	0	1	
1	1	0	1	0	
1	1	0	0	1	
1	0	1	1	1	

2. With the decimal number system, you can use one hand to count to 5. How high can you count on one hand using the binary number system?

____

____

____

____

____

____

____

ICT and me

3 Think and answer

For the first grid, write the binary number for each decimal number you see. Then color in only the 1s with a pencil. What shape do you see? Then use the second grid to make your own shape. Have another student give you numbers to complete the third grid.

15				
9				
15				
9				

LESSON 4 Determining the needs for a digital project

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain the digital tools I may need to work on a project.	☐ Very well	☐ OK	☐ Need more work
• Classify the needs and roles in a group project I'm working on.	☐ Very well	☐ OK	☐ Need more work
• Share my feelings on my role in a group project.	☐ Very well	☐ OK	☐ Need more work

Engage

How do you plan for a new project? Do you prepare differently when being assigned a group project than when you are assigned an individual project? Why is it important to determine the needs of a project - group or individual - before starting it?

Learn

Explorer Ponce de Leon understands the importance of planning. He uses technology to collect data to plan for the future.

Before starting your project, discuss in groups:

- What will the final product be? Presentation, poster, web page, or film?
- What is needed? Make a list of the things needed to deliver the project on time.
- Which tools will you use? Decide on the tools that will be needed to complete each section of the project.
- Who will do each part? Assign roles based on the strengths and interests of each group member.

Let's look at some tools you may need for a group project.

Microsoft Word: Word (in Microsoft Office 365) is an efficient program to use when working on projects. Not only can group members work together at the same time, but with an internet connection, you can set up a Word document to be edited by numerous users, at different locations. This can be done by setting up **online editing.**

Click *Edit Document* → *Edit in Word for the web* to make changes.

Microsoft Paint: You can save the images you create and insert them into your document.

Email: Use email to send your work to other group members or to your teacher. Write your ideas in a message or attach a document or image that you've created. Remember to always tell your group members that you're sending an attachment, so they know that it's safe to open.

Assigning roles

Understanding the roles group members will play in the project is important. Before you start, speak to your group members to discuss the following:

- The strengths of each group member – their personal characteristics that can benefit the group.
- The things needed to complete the project: pictures, text, data, etc.
- The tools that will be needed to complete each section of the project
- The format that will be used to deliver information.

Then discuss who might be best suited for each aspect of the project and assign roles. Be sure to go over any questions group members may have and answer the questions as a group. If there are any questions left unanswered, ask your teacher or family for help.

Explore

Bakkar, the young explorer from the popular cartoon, helps spread information about environmental issues that affect Egypt. He's a role model to Egyptian children.

Think about role models you have, from ones on TV to National Geographic explorers you have learned about and Egyptian explorers. What values and characteristics do they have that you feel make them Egyptian role models? What important issues might they focus on? Discuss as a group.

Keep notes as you discuss. You'll use these characteristics to create your own Junior Explorer in Learn By Doing.

Review

1. Explain how digital tools like Word and Paint can be used for projects.
2. Think about what you just read about assigning roles. Why might it be important to assign project roles in advance? How will it make your project go more smoothly? What could go wrong if you don't assign roles?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



Determining the needs for a digital project

Critical Thinking

1 Think and write

Review your notes from Explore. Write the characteristics of your Junior Explorer below. What makes him/her a good role model for Egyptians your age? How does your Junior Explorer use his/her strengths to spread information about important issues to others?

____

____

Life Skills

2 Plan

It's time to create your Egyptian Junior Explorer!

1. Write the names of your group members. Discuss the characteristics you admire about each group member. How might these positive characteristics help them contribute to the project? Summarize your group's thoughts.

Name	Positive Characteristic(s)	How these will help

2. As a group, think about how you can use Microsoft Word, and other Microsoft programs, as well as Microsoft Paint, to help you complete your project. Write your ideas.

____

____

3. Discuss how you will use email to share and deliver information. Write your thoughts.

____

____

3 Assign roles

Based on your answers in the Plan section, discuss and assign project roles.

Name: ____________________ Role: ________________________________

Name: ____________________ Role: ________________________________

Name: ____________________ Role: ________________________________

Name: ____________________ Role: ________________________________

4 Create

Work with your group to create your Junior Explorer. Write any helpful notes you may need as you work on the project.

____

____

____

____

5 Share

Share your group's Junior Explorer with the class. Explain what makes your Junior Explorer a good role model for Egyptian children.

ICT and Me

6 Think and answer

1. Share your thoughts on how each phase of the project went. Would you do anything differently the next time?

   ____

   ____

2. Describe your feelings as a group member on this project. Did you support the other members? Did you feel supported by them?

   ____

   ____

3. List what you're most proud of in terms of your role in this project. Explain why.

   ____

   ____

LESSON 5 Gathering data and presenting information

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Discuss how to research, collect, classify, and process information to share with others.	☐ Very well ☐ OK ☐ Need more work
• Explain the importance of digital information-handling skills.	☐ Very well ☐ OK ☐ Need more work
• Create a graph to share specific information.	☐ Very well ☐ OK ☐ Need more work

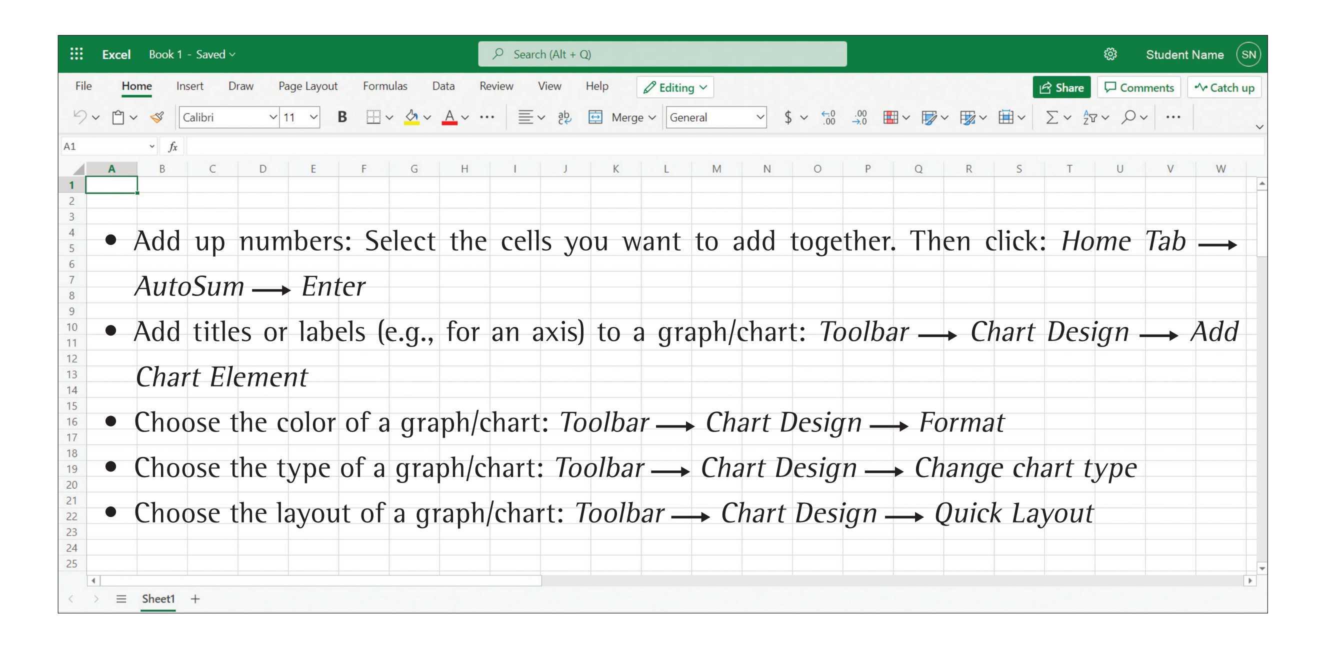
Engage

Think about an issue that's important to your local community, for example air or land pollution, or plastic waste. How can you gather information about the issue and present it to others?

Reminder: To add the values of cells, use "+."
To subtract, use "–"
To multiply, use "."
To divide, use "/"
Use "=" in the cell that will create the formula, for example "= B2 – C1"

Learn

Here are some useful tools in Excel:



Digital information-handling skills

You can research, collect, classify and process information using digital information handling skills.
Research: When researching a topic, first define a research question, then use the internet or offline sources, such as digital books found on your device or in the school library, to find information.
Collection: You can use Word, Excel (for numeric data), and pen and paper. Put data into specific files and folders for different types (e.g. images, text, videos, tables).
Classification: Excel graphs are one example of how you can classify and provide a visual representation of data drawn in the form of a graph.
Processing: Once you have researched, collected, and classified your information, you want to process it to get to results and share them with others. You could use Word for a report, Excel for a spreadsheet, or PowerPoint to create a presentation.

Explore

In groups, discuss how useful you think the tools above are to help you find, organize, process, and present information about an issue that's important to you.

Review

1. Explain how digital information-handling skills can help you gather and share information with others.
2. How can a graph help enhance information in a report or presentation?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



Gathering data and presenting information

Comprehension

1 Read and answer

Think about an issue mentioned in the Engage question for this lesson – plastic waste. How would you use the following skills to help you share your thoughts about this issue with others? Here are some ideas to start with. You can add your own ideas.

Research	Things to find out: How much plastic is used? Thrown away? Recycled?
Collection	What tools would you use to collect this data and why? Do you need just text or would images help?
Classification	How do you use files, folders and different software programs to classify the information? Which is the most important?
Processing	Which is the most effective way of processing this information?

2 Research plastic waste

Research plastic waste in your area. Make a note of the information below. Don't forget to use the digital information-handling skills that you learned as you do your research and data collection.

Life Skills

3 Read and create

Plastic waste is an important issue to many Egyptian citizens. On the next page is some information about the time it takes for different plastic products to biodegrade. Read it, then use what you learned about Excel graphs to answer the questions and create a graph for the information.

How long it takes for something to biodegrade:

biodegrade: naturally decompose

Plastic waste	bags	straws	toothbrush	cup	bottles
Years	20	200	500	50	450

1. Explain how to display the information above as a graph.

____

____

2. Decide what type of graph to use.

____

____

3. Explain how to set the color of the graph.

____

____

4. Create your graph.

4 Share and discuss

Share your information with a classmate. Then discuss as a class.

ICT and Me

5 Think and answer

1. How can using digital information-handling skills help you to become a more socially responsible individual?

____

____

____

2. Which digital information handling skill are you most comfortable with? Which one would you like more help with? Explain.

____

____

____

LESSON 6 Presenting information in an appealing way

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**
• Discuss the importance of using visuals and audio (multimedia) to enhance an informational presentation.	☐ Very well ☐ OK ☐ Need more work
• Explain how to use digital tools like WordArt and Movie Maker.	☐ Very well ☐ OK ☐ Need more work
• Discuss how I can use what I learned to make my own presentation more appealing.	☐ Very well ☐ OK ☐ Need more work

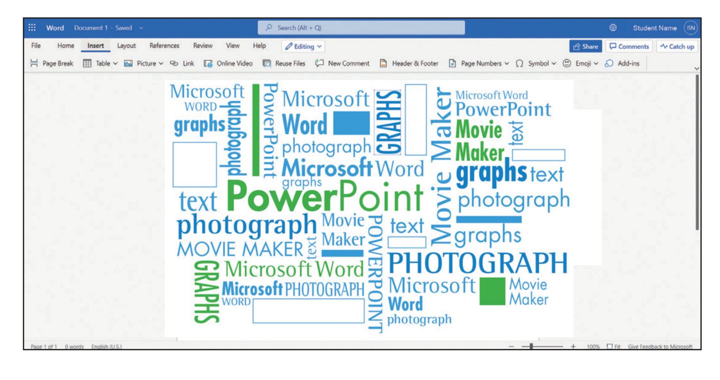
Engage

What is your favorite TV show? Why is it visually appealing? How can we make a presentation visually appealing, too?

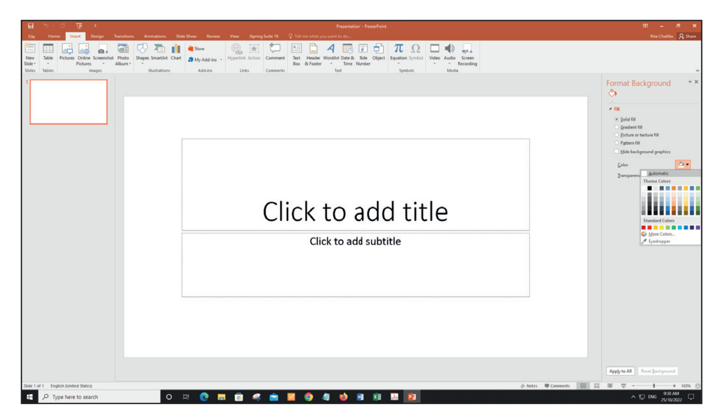
Learn

An effective presentation is just like your favorite TV show or movie – it's a story that you are telling your audience, whatever the content.

Microsoft Word and PowerPoint



Text can show important information in an appealing way. Consider using one or two colors to show emphasis on specific information, and put important text in **bold** to make key information stand out. Use the formatting tools to do this. You can also insert WordArt to make text have even more impact.



In PowerPoint consider using different background colours. **Photographs** that reflect the topic of your message can catch the viewer's eye.
You can also insert shapes or even your own drawings.

Graphs and charts are a good way to share data, especially numbers. Review the graph you created in Lesson 5.

Add **audio** to enhance a text or image. Be sure there's a clear link to the visual displayed data, and that it's not too long or distracting.

Consider using **video clips** in your presentation – ones you find online, or videos you have made.

Movie Maker

You can use Movie Maker to make a film from a selection of still images.



The intellectual property rights of others should be respected when using their photos, videos and audio files.

Explore

Think about the issue you chose in Lesson 5. How could you use the tools above to share your message in a more appealing way? Discuss with a partner. Keep notes. You'll refer to them when working on the Learn by Doing section later.

Review

1. What should you consider when using each of the tools in Learn to share information?
2. Why are the tools above important parts of an effective presentation?

Self-assess

Go to the Objectives at the beginning of the lesson.

Check the correct I can . . . box.



Presenting information in an appealing way

Comprehension

1 Look and answer

How does each type of information in the chart contribute to storytelling? Give examples of how to include them in presentations.

Visual	
Audio	
Text and numerical	

Life Skills

2 Read and answer

Think about the issue that you chose to focus on and refer to the notes you made in Explore.

1. Choose a photo that you could include in a presentation about your chosen issue. Share it here.

2. Gather important data that you can include in your presentation. Create a graph for it here.

3. Think of audio that can go with the photo you chose above. Summarize what it would include.

____

____

____

4. Explain how you might include a video in your presentation.

____

____

____

3 Share and discuss

Exchange your work in Activity 2 with a partner. Discuss what you find appealing in each other's work.

ICT and Me

4 Think and answer

Think about a presentation you have made in the past. How could you use what you learned in this lesson to make that presentation even better?

____

____

____

____

LESSON 7 Producing an effective presentation

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Explain the value of using a storyboard to tell a story.	☐ Very well	☐ OK	☐ Need more work
• Discuss the 10-20-30 rule and how it relates to presenting information.	☐ Very well	☐ OK	☐ Need more work
• Create a presentation for the issue I want to share.	☐ Very well	☐ OK	☐ Need more work

Engage

Think about TV presenters, and your teachers. What do they do to get your attention while presenting? How effective are those methods?

Learn

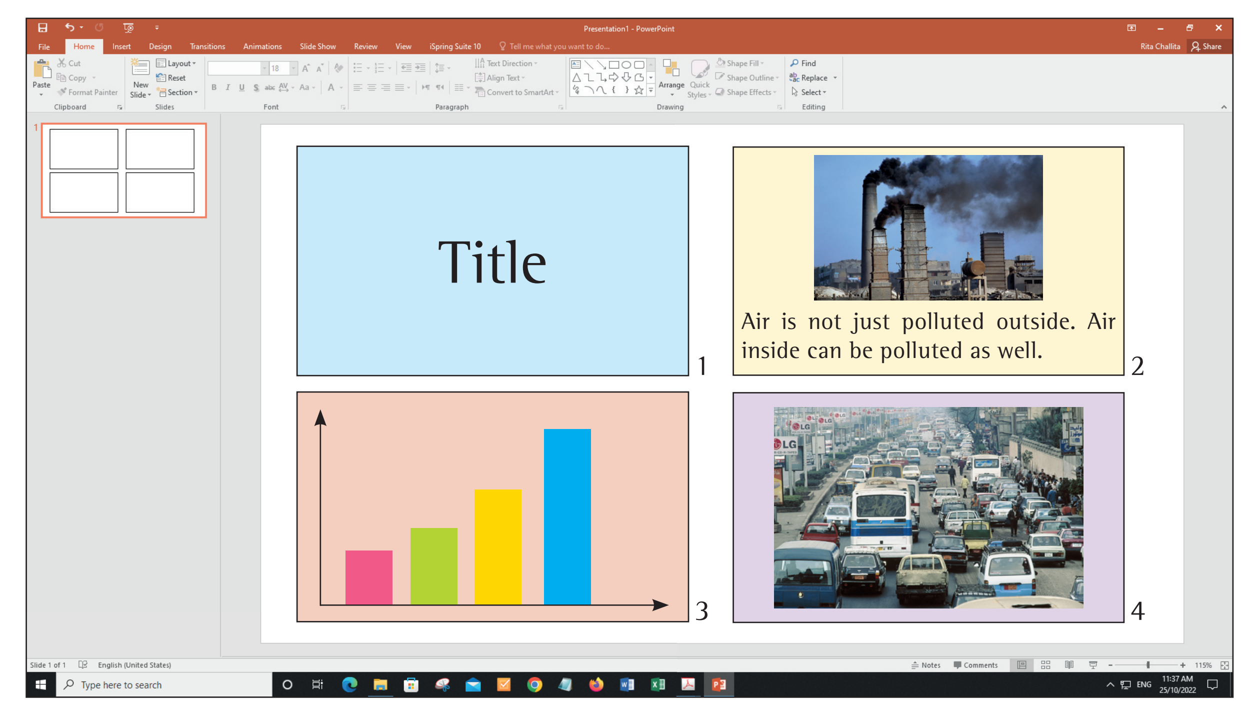
Storyboards

Using Microsoft PowerPoint to make **storyboards** can be valuable to help producing an effective presentation. Storyboards allow you to plan your ideas and pre-visualize the results of a presentation.

A **storyboard** is a chart that shows a sequence of content that forms a plan or outline of your presentation.

Make a very rough version of your presentation with a description of each slide, then go to *View* ⟶ *Slide Sorter* to see an overview of your presentation.





As you can see, a storyboard helps you organize your ideas in order, allows you to tell the story you want in a simple way, and helps you give an organized and understandable presentation.

The 10-20-30 rule of Microsoft PowerPoint

Let's learn about the 10-20-30 rule of PowerPoint:
A PowerPoint Presentation shouldn't present too much information or take up too much time that will overwhelm the audience. Font size should be easy to read.
10: up to ten slides only
20: no longer than 20 minutes
30: font no smaller than 30-point size
When your presentation is taking shape, look at the *'Design'* tab, in PowerPoint which offers alternatives to the normal black-and-white design of your presentation.

Explore

Work with your group about an issue you'd like to share. Think about the story you'd like to tell. What information goes in your PowerPoint storyboard? What will you talk about for each section? Discuss and write notes about what you'd like to include. You and your group members will use these notes to create your storyboard and slides in Learn By Doing.

Review

1. Explain the value of using storyboards for planning.
2. How can following the 10-20-30 rule help you better plan a presentation?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.



Producing an effective presentation

Comprehension

1 Look and answer

Think about the 10-20-30 rule and answer the questions.

1. What might happen if you use too many slides in a presentation?

____

____

2. Why is it important to stick to time limits in a presentation?

____

____

3. You view a presentation that's hard to read. What advice would you give to the presenter for next time?

____

____

2 Read and answer

1. Why shouldn't you just start your presentation without planning the storyboard?

____

____

2. How can you quickly change the design of your presentation?

____

____

Life Skills

3 Think and answer

Let's create your PowerPoint presentation featuring your Egyptian Junior Explorer!
Work in the same groups as you did for Lesson 4's task. Present your notes and choose what you'll use for your presentation. Write the information below.

____

____

4 Plan your presentation

As a group, use a storyboard to plan your presentation. Remember to include scene description, images, and the action, dialogue, and effects that go with each image.

You can use the box below to create your storyboard if you don't have access to PowerPoint.

5 Create your PowerPoint presentation

It's time to use your storyboard to help you and your group create your presentation. Remember the 10-20-30 rule: less is more!

You can use pieces of paper and draw your slides if you don't have access to PowerPoint.

ICT and Me

6 Think and answer

1. How did using a storyboard help you and your group with your presentation?

____

____

____

2. How did using the 10-20-30 rule help you and your group with your presentation?

____

____

____

3. How has working as a group helped make your presentation better?

____

____

____

LESSON 8 Web design principles

Objectives

By the end of the lesson, I will be able to:	After the lesson, check the correct box: **I can . . .**		
• Discuss the features that make websites appealing.	☐ Very well	☐ OK	☐ Need more work
• Explain what HTML coding is and how it can help build a web page.	☐ Very well	☐ OK	☐ Need more work
• Create a poster, presentation, or simple web page to share a story.	☐ Very well	☐ OK	☐ Need more work

Engage

What websites do you like? Which features make them appealing? How do they tell their story?

Learn

Now it's time to share your story. You can share it in a variety of ways. You can use PowerPoint, a poster, or you can post it online as a web page.

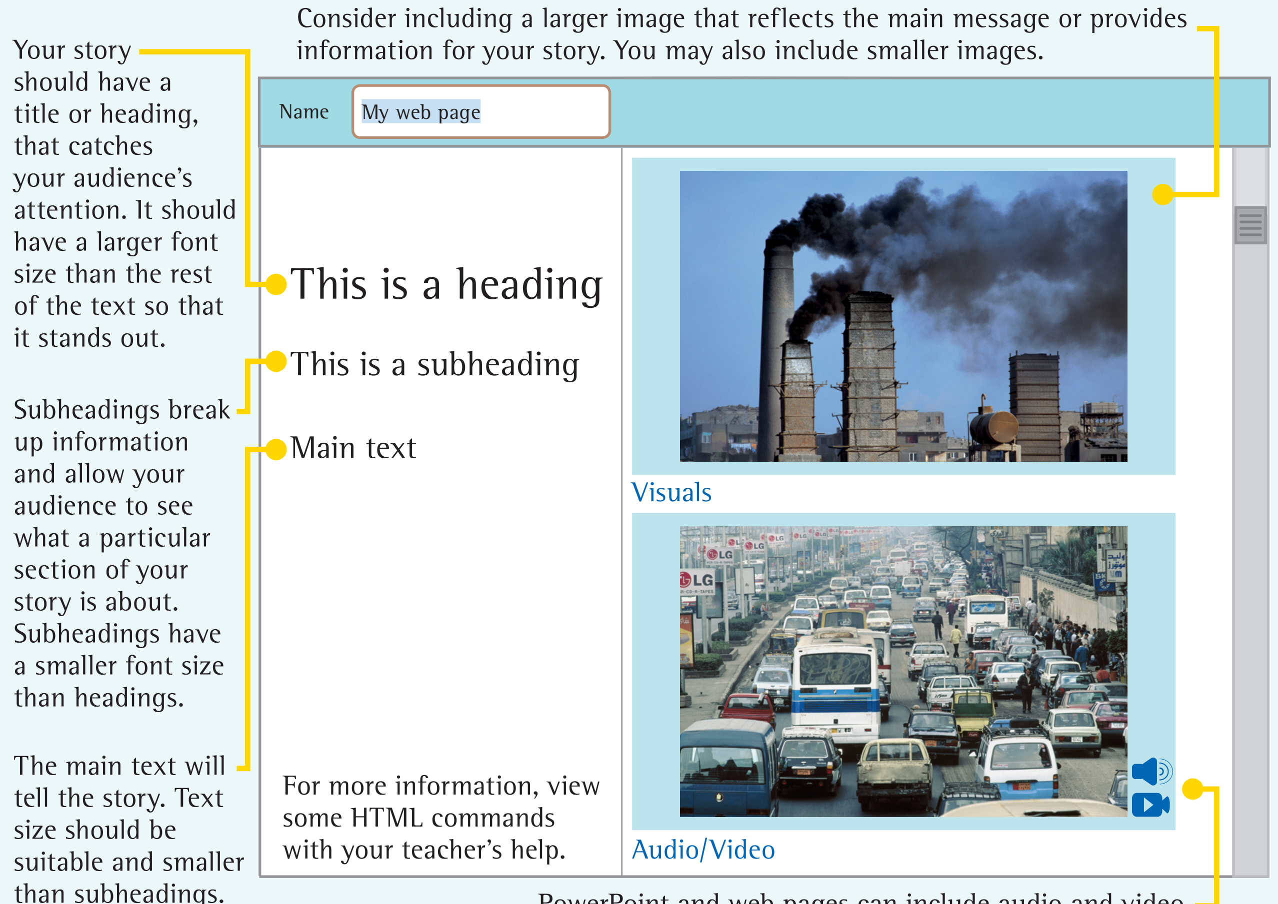
Creating a web page

HTML (Hypertext Markup Language): is the language that will be displayed on a web browser.

In Theme 3, Lesson 4, we asked what you would include on a website if you created your own. While you can create your story directly through a website-building program, you can also use Microsoft Word to create your web page. When your document is ready, choose '*Web layout*' in the '*View*' tab. You can also save a file as a web page by choosing "*file*" then "*save as*" then "*web page*".



The web page displayed in an online search engine



Consider font size and color for each piece – the main text will be smaller, but must still be clearly visible. Use simple fonts so your message is not hard to read.

Explore

Work with your group about the issue you want to present. Is your presentation web-based, a poster, or a presentation? What factors will insure that your type of presentation tells your story successfully? What steps will you take, and who will do them? Write notes. You'll refer to them in the Learn By Doing section.

Review

1. Of the features listed in Learn, which do you think is the most important for telling your story? Explain your choice.
2. What is HTML, and how can it be used as a planning tool for creating your web page?

Self-assess

Go to the Objectives at the beginning of the lesson.
Check the correct I can . . . box.

Learn by doing **LESSON 8**

Web design principles

Life Skills

1 Plan and write

As a group, gather your notes from Explore. Write a plan on how you're going to present your information.

If you're creating a web page, use Word, which will insert HTML tags to enable your browser to open the webpage. Once you've finished, save your document as a web page, using *'Save as'* → *'Web Page'* and then you can open it in a browser.

2 Create your story

Create your story, using a poster, PowerPoint presentation, or simple web page. If you create a web page, remember to use the tools you learned about in Theme 3, lesson 4.

3 Share your story with the class

It's time to share your story with the class. Make sure that you're all clear on your roles within the group.

ICT and Me

4 Think and answer

Congratulations on creating a story to share your message! Write about your experience.

1. What did you enjoy most about the group-work process, from Lesson 4 through to this final stage?

____

____

____

____

2. How did planning help you do your tasks?

____

____

____

____

3. Discuss your individual role in the presentation. What are you most proud of?

____

____

____

____

4. What do you think was the best feature of your presentation? What might you do differently next time?

____

____

____

____

REVIEW Theme 4

Vocabulary

1 Write and compare

Write a sentence for each set of words to explain the connection between them. Then compare your sentences with a partner.

1. computer and binary system

   ____

2. storyboard and PowerPoint

   ____

3. HTML and web page

   ____

Review Questions

2 Read and answer

1. What was the strategy that Dr. Ponce de Leon used to balance the power grid?

   ____

2. How can you unfreeze an Android screen?

   ____

3. What is the binary number system used for?

   ____

4. What should be considered when assigning roles to a project?

   ____

5. What do Excel graphs help to show?

   ____

6. What design tools can you use to help share an important message or story?

   ____

7. Explain the 10-20-30 rule.

   ____

8. List three elements that are necessary for a successful website. Explain why.

   ____

   ____

Critical Thinking

3 Think and answer

1. How does sharing information on issues that are important to you make you a stronger digital citizen?

____

____

____

____

2. In what ways can a website's design distract you from staying on it?

____

____

____

____

Essential Question

4 Think and complete

After studying this theme, I know that I can use ICT tools to help solve everyday problems because _______________________________

____

____

Activity

5 Research, create, and show

Create an advice poster. Give advice on how to make an appealing website. Be sure to include advice about layout, features, and graphics. Share your poster with the class.

Include the following:

- name the website that you chose to design
- specify why you chose this website
- give three interesting facts about this website
- write how you would make this website appealing

Invite your classmates to view your poster

PROJECT Term 2

1 Read the title of the project below carefully. Think about what you learned in Term 2 and how it will help you in your research and presentation.

Share information about an environmental issue affecting Egyptians

As a group, research information about an environmental issue affecting Egyptians. Some examples:

- water/waste management awareness
- energy usage
- climate change

2 Choose your group and an environmental issue.

Who are you working with?

● ______________________ ● ______________________

Choose the environmental issue that interests your group the most, either from the list in Activity 1 or your own ideas. Write and explain your choice.

____

____

Remember: Listen to and respect everyone's opinion. If you have trouble coming to an agreement, ask your teacher for help.

3 Planning techniques

Explain each group member's strengths and how they will be used to contribute to this project.

____

____

What tools will you use to research your issue, ICT or otherwise?

____

How will you organize your information?

____

How do you plan to present your data to the class? Will you use ICT tools like PowerPoint, a web page, or a poster? ______________________

How will you use your mode of presentation effectively? Think about information, design, layout, and graphics.

____

____

Include a mascot like your Junior Explorer in your presentation. Explain your choice of mascot and how it will be used.

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4 Research your issue

In the next step, you're going to ask people in your community to tell you about their feelings and behaviors in relation to the environmental issue you chose. Before you conduct your survey, research important facts about your issue. If you're researching online, be sure to take advantage of information websites such as the Egyptian Knowledge Bank and the Alexandria Public Library.

What information did you find out? Write notes below.

Remember: If you're using ICT tools as you research, be sure to organize your information effectively, such as using clearly labeled folders to store your information.

5 Perform a survey

Survey the public, e.g., your teacher, family, friends, neighbors, or local authorities and officials. You can create a survey using any of the following methods: e-mail, telephone or in person. Be sure to ask for permission before you start. Before asking questions, provide the people you're interviewing with basic information about the environmental issue, based on your notes in step 4. Then ask about the following:

- how they feel about the issue
- what they can do to make a positive difference

Remember: Take good notes as you conduct your survey. You'll need them for your presentation.

6 Create a presentation

Use your notes from steps 3, 4, and 5 to create your presentation via the method you chose in step 3.

7 Share your work with the class

Share how you presented the work to your classmates and teacher. Explain the process you followed.

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المواصفات الفنية:

مقاس الكتاب:	١٩ × ٢٧ سم
طبع المتن:	٤ ألوان
طبع الغلاف:	٤ ألوان
ورق المتن:	٧٠ جرام كوشيه
ورق الغلاف:	١٨٠ جرام كوشيه
عدد الصفحات بالغلاف:	٩٢ صفحة

















Information and Communication Technology

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Acknowledgments:
Cover Anton_Petrus/Getty Images

Student Edition: Level 5
ISBN:
Sphinx Publishing Co.
9 Rashdan Street
Messaha Square
Dokki
Giza, Egypt

National Geographic Learning
Cheriton House, North Way,
Andover, Hampshire, SP10 5BE
United Kingdom

Locate your local office at **international.cengage.com/region**

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Printed in

Print Number: 01 Print Year: 2022